The Builder.

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The Chicago Exhibition Buildings: Further Notes.

THE Manufactures and Liberal Arts' Building, erected from the designs of Mr. Geo. B. Post, of New York, is by far the largest in the Exhibition, and from a constructive point of view the most important (see sketches, p. 3, *ante*). It is the largest covered structure in the world, and occupies a space of 30½ acres.

The southern façade, which has a length of 787 ft., occupies a space immediately opposite the Agricultural Building, on the other side of the grand basin, while the main or longer axis runs north and south for a length of 1,687 ft., and extends into the northern portion of the grounds towards the United States Government Building; it is bounded on the west by the wooded lake. Mr. Post, in making his ground-plan, surrounded his area with a continuous building, consisting of a nave and two aisles, in all about 200 ft. wide. The original intention was then to place in the centre of the inner area thus left a huge dome, which was to be 260 ft. in clear diameter and 160 ft. high, surrounded with two-storied aisles, like the structure going round the outer portion of the site, and which were to be 45 ft. in width.

This scheme had, however, to be abolished in order to find room for the large number of exhibits for which space had to be found, especially as France and Germany threatened to withdraw unless it was conceded. Having these conditions to face, Mr. Post was obliged to abandon the idea of the dome, and he resolved to cover the whole of this internal court with one large unencumbered space, with a span from centre to centre of supports of 368 ft., the largest span of any roof ever erected, and about 6 ft. wider than that of the great Machinery Hall at the Paris Exhibition of 1889. It is also considerably longer, being 1,268 ft. in clear length between the supports. The outer chord of the roof trusses is struck from a radius of 190 ft., which thus gives these great trusses a form of section which is nearly semi-circular.

The great trusses are spaced on centres of 50 ft., while those to the great roof at Paris were spaced 70 ft. 6 in. apart, centre to centre, and the lattice framing is brought to a point at the base and rests on a steel pin. A similar pin is also used as a connexion at the top of the truss, the height of which is 206 ft., and to the top of the ventilating lantern 245 ft. 6in., or 61 ft. higher than the Paris example. The roof is hipped at each end, and is covered with a lantern the whole length and round the hips. The trusses near the bottom are 14 ft. in width and 2 ft. 4 in. on face, while towards the top they are narrowed to 10 ft. At the point where the huge hip trusses come they are varied to suit the sweep of the roof, the four corner trusses which, when taken up, become the hip, being set diagonally on plan. The outer flange of the trusses goes up vertically for a height of 100 ft., and the trusses up to this point are connected by three pairs of horizontal trussed girders, and above by lattice-framed purlins on which the light open rafters rest. At the foot of the raised lantern already mentioned, which is carried along the top of the roof, is placed a walking-way about 6 ft. wide, extending round the whole building at this point, and from which a splendid view of the whole Exhibition can be obtained, while across Lake Michigan on the east an uninterrupted view is obtained.

On the ground floor a covered loggia, about 20 ft. deep, surrounds the building on all sides, and the upper gallery to the inside aisles projects inwards between the great trusses at a height of 20 ft. from the ground level. For the pupose of the erection of these great trusses a travelling stage was used. The galleries enclosing the great roof consist of a nave with raised roof, as has been mentioned, open to the top, while the aisles on each side are covered with lean-to roofs.

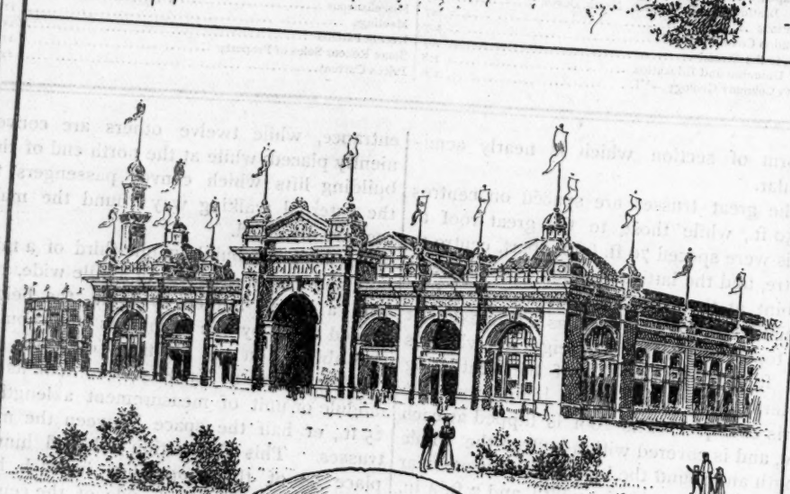
At regularly-spaced intervals on the plan, galleries supported by columns are taken across at the first floor level to connect the gallery floors of the two aisles. For the purpose of ready access to the gallery, groups of staircases are placed at each angle of the building, and two on each side of the central entrance, while twelve others are conveniently placed, while at the north end of the building lifts which convey passengers to the external walking way round the main roof are arranged.

To design a building one-third of a mile long and nearly one-sixth of a mile wide, and with a height limited to 60 ft., the height agreed upon by the architects whose buildings abutted on the Central Court, was the task then given to Mr. Post, who took as his module or unit of measurement a length of 25 ft., or half the space between the main trusses. This disposition allowed him to place 58 of these openings in each long façade, *i.e.*, 29 on each side of the central feature, and 22 openings on each of the shorter façades, *i.e.*, 11 on each side of the central feature, for which he allowed a space of 122 ft. 6 in. in width, the great trusses being specially placed opposite these to suit this feature. The general idea of the elevation consists of a series of square piers with Corinthian-like caps from which spring semi-circular arches, the spandrels being filled in with carving of a not very high order; above is placed a boldly-designed cornice 60 ft. high, crowned with a balustrade, the piers below being emphasized by flag-poles. At the four corners of the building, where the four outer aisles cross one another, are placed pavilions about 60 ft. square, slightly projecting beyond the general face, and consisting of a semi-circular arch on each side, bounded with two pairs of Corinthian columns right and left round which the cornice breaks, and crowned above with flag-posts.

The cornice of the curtain wall stops abruptly against this feature, which serves as a boundary or enclosing line for the whole design. The central feature in each façade, of about double the width, is composed of a three-arched opening, somewhat similar in arrangement to the arch of Constantine at Rome, the lower arches on each side being the same as those of the openings in the curtain walls, thus helping to blend these with the central *motif*. Above the smaller arches are inscriptions, while the central arch, of much greater width, is taken high above, and the whole is crowned with an entablature and a low attic. In front of the piers supporting the arches are colossal Corinthian columns,

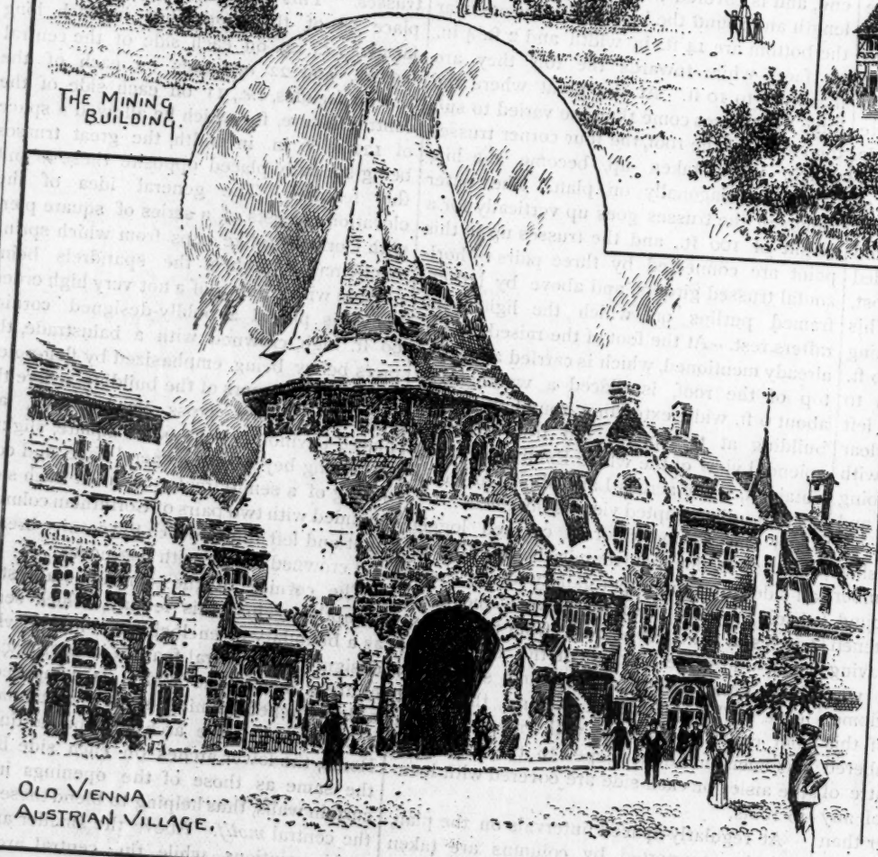
THE WOMEN'S BUILDING

THE UNITED STATES GOVERNMENT BUILDING.



THE MINING BUILDING.

THE GERMAN BUILDING.



OLD VIENNA AUSTRIAN VILLAGE.

MAIN ENTRANCE ELECTRICITY BUILDING.

Sketches at the Chicago Exhibition.

around which break the cornice, and which are emphasised above with statuary and flag-poles.

It will thus be seen that the general scheme is simple, and we think that Mr. Post has been wise in adopting such a treatment.

In a building of ordinary dimensions, it is sometimes customary, in order to avoid excessive appearance of length, to introduce features with an upward tendency, to correct this lengthy feeling, as has been done at the Agricultural Building opposite, but it will readily be seen that in a building one-third of a mile long, it becomes impossible to take in at a glance the detail of any such features, which would consequently appear meaningless, and tend to take away from the dignity of the composition as a whole. These fifty-eight openings of a similar design on the main front tend to give the façade an appearance similar to that of the old Roman aqueducts seen stretching across the country around Rome, and which gain most of the dignity they possess in the repetition of their parts. The skyline has been left unbroken in Mr. Post's design, save for the flag-posts occurring over each pier, and the raised angle and central features, which are boldly accentuated.

The effect of the great roof rising in stages across the outer roof and crowned by the walking way and the lantern at top, is very fine, and composes well.

As to the interior, the great roof itself is an object-lesson of the greatest interest, apart from its wide span. The framework of steel strikes one as being considerably lighter than the Paris example, the trusses being formed of triangular bracing between the inner and outer flanges, instead of cross-bracing as at Paris. The steel is not painted, but remains as it left the works; the result being that it has a certain tone of a varying reddish brown, which is better than a painted surface, and which, being unpainted, saved the authorities a considerable sum of money, amounting to some thousands of pounds sterling. As to general appearance, the roof, although larger in every way, looks smaller than the Paris example; this can be ascribed to two or three reasons. In the first place its greater height takes away from the apparent width in a way which is very marked. In the second place, the ends being hipped take away immensely from the apparent length. It may be said that a semi-circular proportion as adopted here is a better one—it certainly is more classic; but, on the other hand, it does not bring out to the greatest advantage the enormous span. The effect of the comparatively low arches of the Paris example, and the gable ends, gave it a breadth and a length which created an impression on the beholder which are wanting in the example under discussion. Mr. Shankland, the Chief Engineer, has been responsible for the working out of the details of this roof, and great credit is due to him for the manner in which it has been carried out, as also to the contractors, the trusses being erected with a rapidity which is without parallel for a work of this importance.

The sculpture decoration has been designed and carried out by Mr. Karl Bilter, of New York, under the architect's direction. Of course, it does not compare with the work on the Administration Building or the Agricultural Building in importance. At the base of each flag-staff to the main entrance is an eagle with ourstretched wings. If the sculpture is unimportant it is made up for by the coloured decoration in the spandrels and domes of the central and angle pavilions, on which some of the best artists in the States have been employed; these will be dealt with in a special article on the colour decoration of the building, which will appear later.

The Electricity Building (see sketches, p. 3, *ante*), designed by Messrs. Van Brunt & Howe, of Kansas City, is placed on a site which has a frontage of 350 ft. to the great court, and whose major axis has a length of 700 ft. running north and south. The building is bounded on the east by the North Canal, connecting the Grand Basin with the picturesque lagoon, and on the west by the avenue which separates the Mines Building from the Electricity Building, and the centre of which is on the axis of the Administration Building. The plan of the building is divided up into 23 ft. bays, corresponding with the interior supports to the galleries.

The general scheme consists of a nave 115 ft. wide, and of about the same height, crossed at right-angles in the centre by another nave of the same proportions. The trusses are composed of a light iron framework of steel, the upper part being semi-circular in outline, the trusses being composed of inner and outer members, and connected by lattice bracing; at the base the standards are brought to a point and rest on a steel pin. The back members of the standard are taken up above the aisle roof, and have clearstory windows formed in this portion, while the lower portion of the roof itself is filled with glazing. The remaining portion of the area on the ground floor is spaced out to correspond with the 23 ft. bays of the elevation, with wooden posts supporting the gallery floor, through which light is admitted, from skylights in the flat roof which covers these galleries, at every alternate bay. Access to these galleries is obtained by means of four large staircases and by subsidiary ones.

In the centre of each of the four sides is an entrance pavilion, against which the roofs abut, and which are treated somewhat differently. The southern end of the building, abutting on the main court, is provided with a covered ambulatory extending the whole width of the façade, in the centre of which is the principal entrance, consisting of a semi-circular recessed porch 78 ft. in width. It is treated as a triumphal arch 60 ft. wide and 92 ft. high, the arch-mouldings springing from the main cornice. Above, and supported, as it were, by Corinthian pilasters, is a pediment filled with sculpture and supported by figures emblematic of electric lighting and the telegraph, while the whole is capped by an attic crowned with a horizontal cornice, the whole central feature being supported on either side by consoles. In the centre of the semi-circular entrance is placed a statue of Franklin, 15 ft. high, and resting on a pedestal with the historic kite and key, observing the storm clouds. The upper part of the entrance under the arch is treated as a half-dome, divided by ribs carried above the Corinthian pilasters, which are continuous with those running round the building. This covered portion is treated in a light key with colour. From this semi-circle three doorways lead into the central nave, while one on each side leads into the covered ambulatory. The northern entrance, facing on the lagoon, is recessed behind a one-storied loggia, whose roof is supported by Ionic columns of the same type as those which support the galleries on the façades. This loggia is also treated in bright colours of yellows or reds, while above, on the main wall, is a huge semi-circular window expressing the great nave. On either side the surrounding and storied aisles are projected forward beyond the loggia and finished with circular ends struck from a radius of about 50 ft. On the upper story are placed the restaurants. The eastern and western entrances are treated as porticos, slightly projecting, and with circular ends brought back to the face of the curtain walls. As to the elevation, the main scheme consists of a series of fluted Corinthian pilasters 42 ft. high, crowned with entablature and balustrade which break around the pilasters and are carried up with flag-posts. Between these pilasters at the first floor level is a horizontal cornice supported in the centre by an Ionic column. The main entrances are raised and crowned with sculptured pediments on the east and west sides. Against these the roofs of the main naves abut. On either side of these entrances, with the exception of that abutting on the court, towers, 23 ft. wide, are taken up for a height of 170 ft. to the east and west entrances, and 190 ft. to the north entrance. Besides these, and giving a vertical tendency to the composition, in the centre of each curtain wall on either side of the central *motifs* in each façade is carried up a tower, 150 ft. high, with circular dome, which is gilded,* and at each angle of the building a tower in three stages is also raised above the pavilions which mark these points. These towers are introduced by the architects, so as to accentuate the vertical elements and to give to the general design a movement which, "in contrast with its neighbours, may be suggestive of the mysterious functions of electricity." The ironwork of the main roofs is painted a light blue colour, which gives it a lightness which is very suitable, but the ironwork itself is very light in structure, and differs in this respect from the Mining Building next to it. The scale of the Electricity Building is smaller than the buildings which surround it, and the whole composition is more varied in outline than any of the buildings which abut on the main court, and which we believe it was the purpose of the architects to accentuate.

NOTES.

THE discovery of coal at Dover seems to be attracting considerable attention at the present time on the other side of the Channel; the inhabitants of Calais now desire to know whether that useful mineral passes under or near their town. Consequently, they have this week started a "Société de Recherches de Mines de Charbon dans le Pas-de-Calais"—rather a broad title, seeing that their operations are restricted by the articles of association to the town of Calais, and the country immediately adjacent. However, it appears from the report of M. Gustave Dollfus, a well-known French geologist, attached to the Geological Survey of the Republic, that the chances of finding coal are mainly based on the researches of Godwin-Austen, the English geologist, who predicted, in 1854, that coal would be found where it has now been proved, at Dover, and that the same coal-field most probably extended across the Channel into the Pas de Calais. In giving an excellent *résumé* of what is known of the subject, M. Dollfus remarks that all attempts at prosecuting a search for coal near Calais have hitherto been considerably retarded by certain French geologists, who believed that the small coal-basin in the Boulonnais, worked at Hardinghen, was originally conterminous with the immense basin coming from the eastward through Namur, all actual knowledge of which is lost on arriving at Flechinelles and Auchy-au-Bois. If this hypothesis were correct, it would practically be useless to bore at Calais, which is situated to the north of the line of strike indicated. But it has since been recognised that the coal of Hardinghen differs from that at Flechinelles, and our neighbours are now sanguine that the Carboniferous strata from the last-mentioned place pass under Calais and on to Dover. It is thought that the Coal Measures are not so far from the surface on the French side as on the English. There is one ugly circumstance which it is impossible to forget in considering the chances of success of the *Société*, namely, that a deep boring executed many years ago at Calais was reported by M. Meugy, a distinguished geologist, to have reached the Carboniferous Limestone—a bed normally found beneath the Coal Measures. We hope, for the sake of the promoters of the scheme now under discussion, that the observations of M. Meugy will be found to be incorrect. At all events, there seem to be some grounds for the rather facetious remark in M. Dollfus' report,

* These pavilions project slightly, and contain doorways at the ground level which act as subsidiary entrances.

that "*Un jour la vraie communication souterraine entre la France et l'Angleterre se fera par une galerie houillère.*"

EXTENSIONS to the public baths and washhouses of the Parish of St. James, Westminster, in Marshall-street, Golden-square, have recently been completed, from the designs of Messrs. Spalding & Cross. Great success appears to have attended these baths ever since their erection in 1851, and 121,893*l.* has been received from the six and three-quarter millions of bathers and washers who have used the baths during the forty years of their existence. The building was erected in 1851, on the site of a freehold house, No. 16, Marshall-street, then in the occupation of the Paving Commissioners, and was extended in 1861 by the appropriation and adaptation of the two adjoining houses, Nos. 17 and 18, Marshall-street, under Mr. Charles Lee, architect. The present additions have covered the site occupied by Nos. 14 and 15, Marshall-street. The space has been devoted to a first-class swimming-bath, of moderate dimensions, on the ground floor. An ample basement is secured by building the bath on continuous arches, and this will serve as an ample storage space in connexion with the stone-yard, which is at the back. The aim of the architects appears to have been to relieve the interior fittings of the dreary monotony which is too often present in London baths, and by the use of glazed tiles and marble in the floor covering, and similar tiles which completely cover the wall surfaces, and are relieved by hand-painted tile panels and figures judiciously distributed, a satisfactory and refreshing result has been obtained. The bath, which is entirely lighted from the roof, has gangways on three sides, and the dressing-boxes are arranged in a series of arched recesses at the sides, separated from the bath platform by semi-circular headed openings, the piers of which receive the ends of the semi-circular shaped wrought-iron roof principals. The roof soffits are covered with enamelled iron ceiling-plates. The basement contains the establishment laundry and the boilers which contribute the hot water for the swimming-bath. Messrs. Simpson & Son supplied the ceiling-plates and tile work generally, whilst the iron roof principals were supplied by Messrs. Homan & Rodgers, and the heating arrangements are by Messrs. Berry & Sons, of Westminster. The general contract was carried out by Messrs. Gould & Brand, of Camden Town.

FROM a report published in the *Glasgow Echo* of July 26, it appears that the Municipal Buildings, which have not been many years completed, are developing very unsatisfactory conditions in regard to their drainage. An examination of them has been made by Mr. Peter Fyfe, Sanitary Inspector, by the instructions of a sub-committee of the Municipal Buildings Committee. The results of a smoke test applied to the clean-water drain system has been followed by the out-burst of smoke from soil-pipes, and conversely the smoke testing of the horizontal soil drains showed a connexion with the clean-water system of pipes. In fact, it is stated that the results of the tests indicated that the smoke test applied to either system of pipes would, if continued long enough, fill every pipe in the building. The ventilation of the whole of the drainage, we are told, is supposed to be effected through two 6-in. iron pipes led from the drains to the chimney-stalk attached to the steam boiler, and intended of course to act as an extract. Examination at the tops of the soil-pipes, however, showed that only the two nearest to these extracts were drawing downwards; the rest showed an upward current. The most surprising revelation made in the report is that the closets are all trapped with D traps, which, even at the time the building was commenced, had been long under the condemnation of sanitarians. Other details given concur to indicate that this important building, on which the inhabitants of Glasgow so pride themselves, must be in a very unsatisfactory state as regards sanitation.

THE Berlin technical press laments the pitiable architectural show at the Art Exhibition, and ascribes the dearth of exhibits to the counter-attractions to architects of the Chicago World's Fair. The Berlin hanging committee has distinguished itself again by finding the most out-of-the-way places for the architectural exhibits, and these, even with a few exceptions, are inferior in quality to those of the regular annual art show. There are only thirty numbers in the architectural section of the catalogue, and these are supplied by not more than a dozen contributors. Churches, in accordance with the present fashion for them, predominate. Messrs. Abesser and Kröger, among others, show a large one for Breslau; Messrs. Schilleng and Graebner, of Dresden, a picturesque little one for Bautzen. Herr Seeling shows some excellent competition drawings for the Berlin Provincial Museum, for which he obtained a premium, and further some views of his "New" Theatre in Berlin and the municipal theatre in Plauen. Herr Heim exhibits some of his hotels, and Herr Braek some town houses which are unfortunate attempts to copy some English mannerisms. This is probably the last time architecture will figure in the Berlin art shows, as the energetic "Vereinigung Berlin Architekten" will henceforward have its own annual exhibition of drawings.

THE Clergy Orphan Corporation seek to obtain a site of not less than five acres, near London, on which to erect a girls' school, or to find a house and grounds to accommodate 150 inmates. Their removal from the buildings in St. John's Wood-road seems to prelude the changes which may be expected to come about as the scheme for a new trunk line to London of the Manchester, Sheffield, and Lincolnshire Railway assumes more definite shape. At a meeting of the Marylebone Cricket Club held at Lord's on December 7, 1891, the members present ultimately resolved to agree to terms whereby the company undertook to purchase the whole of the school site, and give out of it an area of about 8,600 square yards to the club, in exchange for the M.C.C.'s withdrawal of opposition to the Bill, and consent to tunnel beneath the east side of their ground to a width of 124 ft., reckoning from the Wellington-road. This portion, formerly Henderson's nursery-ground, and bought, freehold, for 18,500*l.* from the Clergy Orphan Corporation, in April, 1889, is now used for practice at the nets. Our readers will recollect that the Company's proposal to establish a large terminus on the Harewood and Dorset squares' site—the latter square being the spot where Thomas Lord and the M.C.C. established themselves in 1787—aroused considerable opposition. The inhabitants found a champion in Miss Octavia Hill. A passage from a letter written by that lady to the *Times* of June 7 last year is worthy to be rehearsed at this juncture:—

> "This railway proposes to destroy two squares; to invade acres of space covered with cheap, pleasant houses with gardens; if constructed it would in a great measure cut off the whole poor district of Lisson Grove from its natural playground—Regent's Park—which at present is approached by pleasant wide streets with little traffic, safe for small groups of children to traverse alone, wide breathing-spaces, now bright with laburnum and lilac hanging over the low garden walls."

The problem for Londoners, Miss Hill says, is no longer how to provide many houses for the poor, but how to procure, for poor and rich, houses with such conditions as shall make life healthy and happy.

THE *Transactions* of the American Society of Civil Engineers for April contain an account of a discussion of a paper read at one of their meetings upon "Tuberculation in Water-Pipes," in which it was held that while there is a vast deal of difference in the action of different waters in producing tuberculation, its action in a wrought-iron pipe is more rapid than in cast-iron pipes. A water-main properly coated with tar is free from tuberculation, provided the tar-coating forms an absolutely perfect covering over the surface of the pipe, as every minute hole in the coating forms the nucleus about which a tubercle or pimple is sure to form. The great value of interior coating in preventing tubercles is evident, when its influence in checking the flow is considered. It is not unusual, in addition to the condition that water-pipes shall be cast vertically with the socket end downwards, to specify in English practice that every pipe is to be cleansed and settled on leaving the sand, and while warm to be immersed in Dr. Angus Smith's preparation for the purpose of preventing rust.

THE *Journal* of the Franklin Institute for July provides an interesting paper upon the "Causes of Fire in Dwellings," in which the author attributes them chiefly to heating and lighting apparatus. Statistics on the causes of fires have been very meagre. Strict cleanliness in heating arrangements is urged, as fires are often produced by accumulation of dust and fine organic matter, and before "firing-up" in the autumn it is recommended that the entire apparatus be thoroughly examined. Ashes retain heat for a long time, and when seemingly cooled should not be placed in wooden barrels or near frame buildings. Gas fixtures should not be so fixed as to be capable of swinging against combustible substances, such as curtains and woodwork, but should be provided with stops to obviate such danger. Another point often overlooked is that if a window be opened near a gas burner a draught may blow a lace curtain into the flame, and a fire results. The author argues that woodwork near stoves should be protected with bright tin, which acts as a reflector to the heat rays, while a black or rough surface absorbs them. Also that while brick platforms are not so safe as tin, because stoves are not apt to remain as stable upon brick as upon metal, that brick arches are the proper means to adopt to protect flooring, and that if brick arches cannot be obtained, then a layer of thick asbestos paper or concrete should be first laid on the woodwork, upon this a layer of sand and concrete, and then bricks laid in good cement, upon which another layer of bricks should be laid, but in such a manner as to leave an air space between it and the preceding course. The safest system of heating, however, he considers to be by hot water, with pipes fixed free from any woodwork. The reason why steam-pipes ignite wood he asserts to be twofold—(1), by allowing the water to run low the steam becomes superheated, causing a true combustion; and (2) pipes containing steam at the usual temperature may cause the secondary phenomenon of spontaneous combustion. In the latter case, the steam pipes slowly dry the wood, the contained moisture being vaporised, and at last the wood assumes a state resembling charcoal, whereupon the glowing or combustion, well known in the case of charcoal, takes place spontaneously. Other trite facts collected in this useful paper render it of practical utility for perusal.

AN architect, a member of the Institute, writes to us:—

"DEAR SIR,—I beg to enclose two cards which have just arrived, addressed to me, which you are at liberty to make any comment upon, omitting my name in the matter.

The sooner this sort of thing is put a stop to, the better will it be for the profession."

The cards enclosed are a trade announcement from an engraver and designer of

"Memorial Tablets, Heraldic, artistic and other brass plates," accompanied by a separate card with the words "A commission of 33 per cent. is allowed on all orders executed through your kind recommendation." We hope all architects who receive this card will note the name of the sender as a person to be boycotted for the future.

LETTER FROM PARIS.

IT is curious to observe that the public which shows an entire indifference to the architectural exhibits at the Palais de l'Industrie during the annual Salons, has nevertheless crowded to the same building to see the design for the Opéra Comique. The decision having been made, the centre of interest for the artistic world is now turned towards the École des Beaux-Arts, where the competition for the Prix de Rome was adjudged last week.

In painting, the subject given was Samson, blind, turning the mill amid the jeers of the Philistines. The subject has the advantage of giving an opportunity for the study of the nude, and also for an effective general composition. The competitors have not varied much in their treatment of it. M. Maurice Mitrecey, who has obtained the Grand Prix, has produced a work of great talent, showing solid and luminous painting and careful drawing, qualities which he owes, no doubt, in great measure to the teaching and example of his master, Jules Lefebvre. The principal "second grand prix" has been awarded to M. Trigoulet, a pupil of MM. Gerôme and Henri Lèvy (who has shown perhaps more vigour but less learning in his composition, than are seen in the prize work), and the "second grand prix" to M. Georges Charbonneau, pupil of M. Bonnat. The picture by M. Rouault is noteworthy for a real originality which gives much promise for the future.

In sculpture the subject given was "The Golden Age in the reign of Saturn," as described by Hesiod. The subject has no more novelty than that for painting, but, like the former, gives the competitors the opportunity of showing their knowledge of anatomy. The jury awarded the grand prix to M. Octobre, pupil of MM. Cavelier and Tony Noel, who submitted a bas-relief which is truly masterly in style. The principal "second grand prix" was awarded to M. Desruelles, pupil of MM. Falguière and Lanson, whose figures are modelled with great delicacy and with a pretty natural sentiment. The inferior "second grand prize" has been awarded to M. Lemarquier, pupil of MM. Thomas, C. M. Gautier and Moreau-Vauthier, for a scene with a curious bucolic simplicity. M. Belloc having already obtained the "second grand prix" in a previous year, is precluded this year from competing except for the first place, which he has failed to obtain in this instance, though he is a young sculptor with an undoubted future, and his Virgilian idyll pleased us much by its simplicity and poetic charm. The whole exhibition of works has proved of higher interest than usual, and speaks well for the general level of artistic attainment among the younger generation.

While M. Nenot is actively engaged in the task of carrying on the new Sorbonne buildings in such a manner as not to interfere with the work of the various "Facultés," the Department of Fine Arts is occupying itself about the decoration of these buildings. Eleven painters have received important commissions for decorative works. M. Besnord is to execute a mural painting of large dimensions for the amphitheatre of the Chemistry section; M. Gervex is commissioned to make a mural painting and two panels for the amphitheatre of the Physics section; M. Montenard will decorate the amphitheatre of Mineralogy. In the large hall of the Conseil Académique, M. Benjamin-Constant is to paint six medallions representing the Faculties of Law, Medicine, Science, Literature, the Schools of Charters and of Chemistry. The amphitheatre of Anatomy will be decorated by M. Aimé Morot; that of the Faculté des Lettres is entrusted to M. Gabriel Ferrier; that of Geography to M. Toudouze. In the Salle du Doctorat, M. Schommer is to execute a minute picture and a ceiling; M. Rochegrosse will decorate the staircase of the Library, M. Carrière the amphitheatre of Liberal Education, and M. Rixens the Salle St. Jacques, where he is to paint a picture commemorative of the jubilee of M. Pasteur. It would seem, from this list, that the Ministry have been actuated by a desire to hold the balance equal between the members of the two rival Salons. It may be observed also that all the artists, with the exception of M. Rixens, are left absolutely free in regard to the choice and treatment of their subjects, except that they are required to have a previous understanding with the Rector and with the architect of the building.

Sculpture has had its share in the recent liberalities of the Ministry, which has entrusted a certain number of works to well-known sculptors for the decoration of the new museum of Natural History, a building which, commenced under M. André, has since his death been carried out under the direction of M. Dutert. Five sculptors, MM. Allar, Barrias, Coutan, Frémiet, and Marqueste, have been commissioned to execute models and bas-reliefs. That of M. Allar, the subject of which is not yet known, will form part of the decoration of the façade. MM. Barrias and Coutan will represent "Les Races Humaines." M. Frémiet is to execute a combat of animals; M. Marqueste a combat of men and animals. In regard to the sculptural decoration of the new Sorbonne, M. Nenot has made certain proposals. As the building is being carried out at the joint expense of the State and the Municipality, the works of this nature will be executed at the cost of the Municipality and by sculptors selected by them.

The interior decoration of the Pantheon progresses very slowly. M. Falguière has completed the model for the monument of the French Revolution, which is to be raised at the extremity of the nave, where the choir formerly was. The design has been completely remodelled since its first conception. As now designed it represents an altar "de la Patrie," decorated with flowers, on which are three large statues symbolising Liberty, Equality, and Fraternity, holding each other by the hand, and overshadowed by the folds of a large flag—the national standard. Two subordinate groups are placed one at each side of the altar; on the right, "La Loi" seated, holding a tablet with the code, and "La Renommée" about to take flight to announce to the nations their deliverance from tyranny. On the left is a warrior, sword in hand, ready to defend his country, while near him a female figure on the steps of the altar stretches up her hands towards the figure of Liberty. This model will shortly be examined by the Fine Art Committee.

The Municipal Council, the session of which has just closed, voted, before their separation, for the purchase of a certain number of pictures and statues which had figured in the two Salons of this year. It may be observed also, as a happy innovation, that the Council has not on this occasion confined its purchases to painting and sculpture, but has also purchased a certain number of works of industrial art, which will form part of a collection of ancient and modern decorative art which the municipality is anxious to form in the future Musée Galliera, an excellent idea which cannot be too much encouraged. In spite of the incendiarism of the Commune, the Municipality of Paris still possesses some admirable tapestries and some furniture of great interest. In adding to these some of the objects of faïence, stoneware, pewter, &c., annually exhibited by Delaherche, Desbois, and others, they will have in some years a collection of considerable value, while giving a new impulse to art industry. It will be the part of M. Stupuy, the new curator of the artistic collections of the municipality, who is a man of taste and spirit, to aid in the furtherance of this new project.

Some new gifts have been made to the Louvre. The department of Greek and Roman antiquities has received a series of bronzes from the excavations in Algeria, in the camp of Cherchell. The department of Greek ceramic works has also received a valuable vase, a "Rhyton" with two heads, in terra-cotta, of the sixth century B.C.; and M. Carpentier has given to the department of painting sixteen works by the landscape-painter Chintreuil.

At the École des Beaux-Arts, the Troyon competition is shortly to be adjudged; the subject is "A Landscape seen under Sunlight Effect after a Storm."

M. Veyrassal, the landscape-painter, who died three weeks ago at Paris, leaves behind him the remembrance of a truly conscientious artist, and a man generally beloved. Since 1848 he exhibited assiduously at all the Salons, either as engraver or painter, and received medals in 1866, 1869, 1872, and 1889. He took pleasure in reproducing, with realistic fidelity, the strong teams with their harness decorated with red and blue, which are to be seen yoked to the waggons of the country people, the horses hauling the canal-boats, &c. In this special class of painting he had acquired a personal reputation, and many provincial museums possess pictures in which he has illustrated the picturesque aspect of the peasant life of the district. He died at the age of sixty-six.

We have to announce also the death of Mdlle. Nelly Marandon de Montyel, a miniature painter of talent, who for more than thirty years directed, with untiring zeal, the "École Nationale de Dessin pour les Jeunes Filles," at Paris. Her father was a painter, of Bordeaux, who had his day of reputation in his art.

THE BRITISH ARCHÆOLOGICAL ASSOCIATION AT WINCHESTER.

THE Jubilee Congress of this Association was commenced on Monday last, July 31, the Earl of Northbrook, G.C.S.I., being President of the Association for the year. There is peculiar fitness in the place of meeting, for, while Winchester indicates in all directions that it is essentially a city of the present, the mass of old buildings shows eloquently enough that it is a city of old memories as well. While its name attests its existence in Roman times, the actual plan of the city reminds us forcibly of this early period. The old walls of enclosure no longer exist, and they have been removed so completely that a search is necessary before fragments even can be discovered. Yet the contour of their known direction indicates that the form of the city was a parallelogram, the angles possibly having been rounded, a usual Roman plan. The High-street divides the area into equal portions from east to west, nearly so, but not quite; and the other streets are either at right-angles to or parallel with it, thus preserving in its plan an arrangement that dates most probably from Roman times. Earlier still, however, beyond all doubt was the origin of Winchester; for ancient British coins, and prehistoric relics, even, have been discovered within its area. But apart from mere conjecture and inference, important as these are, Winchester has recently (as was eloquently set forth in the opening address of the noble President) celebrated the eight hundredth anniversary of the erection of its present cathedral, the seven hundredth anniversary of the recognition of its municipality, and the five hundredth of the foundation of its College. The Council of the British Archæological Association, therefore, did well in accepting the invitation of the Mayor and Corporation to hold their fiftieth annual meeting within its walls, and the more so since the second of such gatherings, almost the beginning of the Society, in fact, was held here forty-nine years ago.

Brilliant sunlight enlivened the proceedings when the Mayor and the various members of the City Corporation rendered a hearty welcome to the visitors, the Mayor making a happy address in well-chosen words. Mr. Allan Wyon, F.S.A., Treasurer of the Association, responded, and, in doing so, he took occasion to review the work which had been accomplished by the Association during the period of its existence. Many local associations had been formed; in fact, so many now exist that there is hardly a county without one. Anthropology was a science, arising out of Archæology, hardly known fifty years ago, which had already produced important results: churches had been restored, more or less well; ancient buildings had been cared for; and public taste had been formed by the various societies to such a degree that the Government in recent years had been able to carry a measure for the permanent preservation of some few ancient works, a thing which would have been impossible at the period prior to the existence of those societies.

The party then adjourned to the Cathedral, where the Dean of Winchester proceeded to describe the ancient fabric and to point out the various points of interest. The heraldic bearings on the roof of the choir engaged much of his attention, and his remarks were of value as showing the aid that heraldry can render in proving the dates of old works. The year 1501 can be shown in this manner to be that of the construction of this portion of the work. The bosses of the first bay are charged with devices relating to the See of Winchester; those of the second bay contain devices relating to the kingdom; while those of the third bay, at the east end, relate to the Passion of our Lord—the emblems forming probably the most complete series in England. The chests containing various bones of the Anglo-Saxon kings and of other persons, confusedly, were pointed out as curious examples of Renaissance work. Indeed, the upper portion of the choir-stalls is a remarkable instance of the new style, which deserves more

attention than has been bestowed upon it. In the crypt, the Dean described the important works of clearance that he has had effected. Not only have various masses of masonry been cleared away, which formerly supported monuments in the church above, not now in existence, but he has had many feet of earth removed. The crypt is now to be seen under circumstances of great advantage in consequence. It is restored to the original level. But it is apparent that it was never put to any use. No interments, no floor paving was found. In fact, although an incredible number of loads of earth were removed, hardly an ancient relic was met with. But it was apparent that the recent level had been in existence from a very early period. This was proved by its having determined the level of Bishop Lucy's work in the early part of the thirteenth century. There is no real foundation for the Cathedral, and one of the columns was found to be built on a large flat slab of stone, resting upon the wet subsoil. Peat exists at a short distance below the present level. Mr. Park Harrison, M.A., pointed out, on the invitation of the Dean, three archaic-looking capitals which he believes to be of Saxon date; and Mr. Loftus Brock, F.S.A., showed two masses of masonry into which Bishop Lucy's work is built, different from the well-defined Norman portions, which may be parts of one of the previous Saxon churches. On returning to the north transept, the Dean referred to the destruction of much of the valuable wall decorations of the chapel of the Holy Sepulchre in recent years by the Cathedral authorities, to gratify the tastes of an irate organist who required and who obtained an easy means of access to his organ—the latter being a huge affair, the posterior elevation of which is no small disfigurement to the north transept. The Dean's discourse was a model one. In front of the objects themselves he spoke of wide and close-jointed masonry, periods of building, heraldry, sculpture, the various important monuments, and shrines; and in the feretory his audience were able to see, by degrees only, owing to the large numbers present, a remarkable collection of fragments of sculpture and carving, found during various recent works, and here preserved. Here is the built-up statue once on the west gable, now superseded by a new one. It had been coarsely carved, and its form made up by a coating of plaster. In the chantry of Bishop Gardiner, the curious reredos, which exhibits much Italian feeling rather than Gothic, was pointed out.*

In the afternoon a visit was paid to Winchester College, where the Bursar of the College, Mr. F. Kirby, F.S.A., one of the Vice-Presidents, indicated many of the various points of interest. He prefaced his remarks by describing the numbers of the various foundations, and how each class was located, how many members were placed in a single apartment; the domestic offices, such as the brewery, the shaving-room, the slaughter-house, &c., requiring prominence in the arrangements. The general ground-plan of the buildings, as erected by William of Wykeham, remains, and the portions added at a later period can readily be traced. The work is designed in a style remarkable for its fitness, ornament being applied where of service, as in the chapel roof and elsewhere. But the buildings are for the most part plain and effective. The cloisters have arched rafters of oak in capital preservation. Mr. Kirby conducted his audience from one quadrangle to another, then into the dining-hall, where the position of the open fireplace was noted; into the chapel, and through the cloisters. The party then proceeded to Wolvesey Palace on the opposite side of the road, where Bishop Morton's work, by some supposed to have been designed by Sir Christopher Wren, was examined, and its state of disuse deplored. The ruins of the fine Norman castle adjoining came in for inspection and description. A visit was then paid to the Hospital of St. Cross, which was described by the Master and others. Here again, a good deal of screenwork was observed, designed entirely in the style of the Renaissance, and it appears evident that Winchester must have helped forward the new style to a degree not hitherto recognised.

In the evening, a large party assembled at the Guildhall, on the invitation of the Mayor and Mayoress, and here the noble President delivered the inaugural address. The civic plate, maces, &c., were on view, together with a large collection, on loan, of choice books, engravings of old buildings, ancient objects, and especially the important series of Winchester measures. The party separated at a late hour.

On Tuesday, August 1, the proceedings consisted of a journey of exploration of the country to the north of Winchester, and a visit to Stratton Park, on the invitation of the Earl of Northbrook. Proceeding along one of the Roman roads out of the city, the open downs were soon reached, and after a brief halt to inspect some tumuli of very early date, which were described by Mr. T. W. Shore, an extended visit was made to the curious little church at Stoke Charity. It is filled with objects of interest. It consists of a small nave, north aisle, chancel, and north chancel chapel, with a timbered spirelet at the west end of the nave. The arches are well-developed Norman work of good type, and there is an interesting doorway on the north side of the north aisle, in an unusual position for an entrance, close to the chancel arch. On the left of the chancel arch is the peculiarity of a hagioscope with a double slope, one looking into the chantry chapel and the other into the chancel. There are altar tombs, brasses, a little stained glass, and several monumental slabs. But the most unusual object is a sculptured group which deserves to be placed in a better position than the corner in which it is at present deposited. Micheldever Church, like the one last named, was described by Mr. Shore, who briefly related the descent of the Manor and the holding of the property by knight service rendered to the Crown by the monks of Hyde Abbey. The church having been destroyed by fire many years ago, has been rebuilt in brick, in octagonal form, but the ancient fifteenth-century tower remains at the west end. Its belfry windows are filled in with slabs of stone pierced with ornamental apertures, as in the churches of Somerset. Within the chancel are some beautiful monuments by Flaxman. The party then proceeded to Stratton Park, where they were welcomed by the President to luncheon. After a prolonged stay, during which the pictures and other works of art contained in the mansion were examined, the return journey was begun. The mansion is in Classic style, with a portico of four sturdy columns of stone with a pediment, the walls of the fabric being of painted cement. It stands in a park of very great beauty. The church is a new building, in the style of the fifteenth century, built of flint and stone. The site of the former church is in the park, and is marked by a modern cross. A visit was made to King's Worthy Church, a restored building of no great interest, although the font, of fourteenth-century date, is good. The church was described by Mr. Shore and by Mr. N. C. H. Nisbett. The adjoining church of Headbourne Worthy was next inspected, where the Saxon features of the fabric were pointed out by Mr. Loftus Brock. The worked material is Quarr Abbey stone, neatly cut and bedded, the walls being of small rubble and flint. There are several pilaster strips and a little long-and-short work. But the principal feature is the western doorway, over which are large sculptured figures of the Saviour, with St. Mary and St. John, in mutilated condition, but of the same early date. The chancel arch, which was straight-sided, has unfortunately disappeared during the restoration of the church. No attempt, fortunately, has been made to restore a curious thirteenth-century piscina in the nave.

In the evening a meeting was held in the Council Chamber of the Guildhall, at which the Mayor presided. An important paper was read by the Mayor on the well-known font of the Cathedral. He had traced its material to Belgium, and rendered a list of several other fonts in France and the Low Countries so similar in design and material as to justify the belief that the font had been made in Belgium, probably at Tournay. Having regard to the legend of St. Nicholas, events in whose life are represented on the sculptures, the lecturer concluded that it had been carved between the years 1170 and 1200. Another paper was then read by Mr. T. F. Kirby, F.S.A., descriptive of the curious little chantry chapel founded by Fromont within the cloisters of Winchester College. It dates from the year of the founder's death, 1420, when the work was nearly, but not quite, completed. The original deed of trust, with the College seal, was exhibited. The date of erection being so well made out, the building is of interest in regard to the style of its architecture.

[We will next week continue our report of the proceedings of the Congress.]

* It may be worth mentioning here that Winchester Cathedral was illustrated and described in some detail in the *Builder* for October 1, 1892.

THE KENT ARCHÆOLOGICAL SOCIETY.

The annual meeting of the Kent Archæological Society was held on Tuesday, the 25th, and Wednesday, the 26th of July, at Edenbridge. The place of assembly was chosen somewhat away from the usual districts in which the meetings have been held previously, in order that a fresh range of country might be traversed, and a different class of antiquities visited. Kent is a county so large in extent, and so rich in antiquities, that this district has remained unexplored without any diminution of interest in the programmes of previous years. The scenery of the locality, now opened up from London by the new railway to Tunbridge Wells, is of great beauty, and it appeared to be unknown to the bulk of the visitors. At eleven o'clock on the 25th the proceedings were commenced by the holding of the annual meeting, at which the President, the Earl Stanhope, F.S.A., took the chair. The report presented indicated a very flourishing condition of things, there being over 800 members, and more than 700*l.* in the bankers' hands. Nearly thirty new members were elected, as accessions to the numbers noted above. By the close of the proceedings, a large contingent of members and their friends had arrived, and the party, to the number of over two hundred, proceeded to Edenbridge Church, where, after they had been welcomed by the vicar, the Rev. C. F. Gore, M.A., an interesting description of the building was given by Mr. J. Oldrid Scott, F.S.A. The church is a double one, the northern nave being the oldest portion, although the fabric must have been rebuilt to its existing size early in the thirteenth century, the nave arcade being fifty years later still, and many of the windows being fifteenth-century insertions. At the west end is a tower with a timber-shingled spire. Mr. Scott pointed out a single small Norman window on the north side of the nave.

In the afternoon the party proceeded in a long cavalcade of carriages along the pretty lanes of the district to Hever. At the church the Rev. R. Lathom Brown, M.A., gave a short description of the fabric, which consists of a nave and a single aisle, each repeated to the chancel, both aisles being on the north side, that to the chancel being a chapel, containing the altar tomb and the well-known brass of Sir Thos. Boleyn, Earl of Wiltshire, the father of Queen Anne Boleyn. This, and the beautiful brass on the floor of the chancel to the memory of Margaret Cheyne, *ob.* 1419, were much admired. They are both in admirable condition. The church has a lofty timber spire, covered with shingle.

A visit was then made to the principal object of the day's pilgrimage, the fine old Castle of Hever. The party entirely filled the quadrangle within the entrance gateway, and here Mr. Loftus Brock, F.S.A., described the ground-plan of the castle, and related its history. No part is earlier than the building erected by W. de Hever after obtaining licence to crenelate, *temp.* Edward III. Considerable portions of this early building still remain incorporated in later work; and they were pointed out. The principal parts, however, and the fine gateway, date from the time when the Boleyn family settled here, on the purchase of the estate by Sir Geoffrey Boleyn, Lord Mayor of London, *temp.* Henry VI.; but the fabric was again remodelled early in the seventeenth century, the long gallery and much of the quadrangle being insertions. At this period the hall lost its open roof, and a flat ceiling was substituted, the ornamental ceilings of the living-rooms, including that of the room in which Anne Boleyn is said to have been born and Queen Anne of Cleves to have died, being of the later time. It is, therefore, a mistake to believe that the fabric is of one date. Its general resemblance in plan to Ightham Mote was pointed out, and references made to the truth of the traditional visits of King Henry VIII. prior to his marriage with Anne Boleyn.

Chiddingstone was next visited, where the party saw for the first time during the proceedings some of the monumental slabs of cast iron, for which the district was celebrated. The remarkable timber houses of the village, opposite the church, were inspected; and some of the party paid a visit to the Chidding Stone, from which the village takes its name. An evening meeting was held after the return to Edenbridge, when papers were read on Edenbridge; on Gavelkind; and on the iron trade of the Weald of Kent, Earl Stanhope presiding.

On Wednesday, the 26th, an early morning of brilliant sunshine was followed by heavy thunder-

clouds and drenching rain. The proceedings were greatly hindered in consequence, and it was fully mid-day when there was any prospect of a change of weather.

The rain was not over when a long line of carriages was formed, numbering over twenty, and a large party started to visit Cowden Church and Lindfield Mark. The quaint village of Cowden, with its picturesque group of tiled houses and trees grouped around the lofty spire of the church, forms a ready-made picture for the artist. The church consists of a nave with a north aisle, a chancel, and a south porch. The spire, which is wholly of heavy timber framing, covered externally with shingle and tile, stands on huge trusses the whole width of the west-end of the nave. From these, the sides of the tower are carried up in timber before the slender spire begins. Mr. Oldrid Scott described the fabric, expressing his belief that the whole of the timber framing was of fourteenth-century work, the open roofs of the church being a little later. The mouldings pretty clearly confirm his opinion. There is a charming wrought-iron stand for an hour-glass still remaining attached to the seventeenth-century pulpit. Mr. G. Leveson-Gower, F.S.A., gave a description of several curious entries in the church books relative to lights burning before statues, etc.

It had been intended to pay visits to the fine old houses of Crippenden, the home of the Tichborne family, where the panelled hall was to have been seen; and also to the old house, Scarletts, but the delay owing to the weather rendered this impossible, and progress was therefore made direct to Cowden.

Passing several of the enclosed sheets of water, once used in the iron manufacture, when the district was filled with smelting works, the party at last arrived at the great earthwork at Lingfield Mark. Here, in a tent, the whole party partook of Mr. V. Beresford Melville's hospitality. Afterwards, Mr. Geo. Payne, Hon. Secretary, to whom much praise was given for his management of the arrangements, delivered an interesting lecture on the camp, pointing out its three lines of defence. Although occupied by the Romans, it is clearly a fortified *oppidum* of the ancient Britons, and its relation to other camps within sight was explained.

The sun shone out brilliantly, and a long stretch of country, large parts of Kent, Surrey, and Sussex, was laid out like a map at the spectators' feet. Towards London dark storm clouds still hovered. On the return journey some of the party visited the old house known as Bazing, and later further hospitality was received by the party at Oakdene by Mr. H. A. Darbishire, J.P. Here an interesting meeting was brought to a close.

THE INCORPORATED ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

WE resume our special report of the annual meeting of this Association, held at West Bromwich on July 13, 14, and 15 (see the *Builder* for July 22, p. 65, for the suggestive inaugural address of the President—Mr. J. T. Eayrs—and other matter).

The Parish and District Councils Bill.

Mr. Robert Godfrey, Assoc.-M.Inst.C.E., Surveyor to the King's Norton Rural Sanitary Authority, and District Surveyor to the Northfield Highway Board, read a paper on "The Parish and District Councils Bill (Local Government Bill, 1893)," in the course of which he said:—

During the nineteen years of the existence of this Association, it has never happened that a Bill materially affecting a considerable number of its members has been before Parliament at the time of the annual meeting; and the fact of the Parish and District Councils Bill being still under consideration at the present time affords a good opportunity for the discussion of its provisions, in so far as they bear upon the position and duties of many of the members of this Association.

The Municipal Corporations Act was the first great step in affording communities the means of adopting measures to protect the public health, but its provisions only affected a comparatively small area of the country. The Act of 1848 was the next step by which communities outside the limits of the Municipal Corporations Act were enabled to adopt a form of local government, and to adopt those measures which related to the conservation of public health.

The Public Health Act of 1873, which was a very fair attempt at codification, next covered the remaining portion of the country with "Authorities," upon whom devolved some few of the duties which pertained to urban authorities.

Next came the long-looked-for Local Government Act of 1888, which established the County Councils, and at length, in 1893, twenty years after the Act of 1873, we have an attempt to reform the Rural Sanitary Authorities established by that Act.

Mr. Fowler, in introducing this Bill, said: "The present Government is not open to the censure so freely cast upon it of introducing a sort of harum-scarum Bill, for which there is no necessity and no demand, and which is to serve some political purpose;" but the writer is of opinion that the adjective "harum-scarum" is very appropriate, and there is abundant internal evidence of the harum-scarum nature of the Bill. With the politics of the matter we have nothing to do. The aim of this Association should be to endeavour, on the one hand, to take such measures as will improve the Bill, both in the interests of the members who are prejudicially affected by it, and on the other to get introduced into it clauses which, at present, can only be obtained by consent of the Local Government Board.

Briefly, three new authorities are established:—

1. *The Parish Meeting*, whose functions are to—*a*. Elect the Parish Council if no poll is demanded. Sec. 3 (5). *b*. Adopt the "adoptive Acts" if in its wisdom it sees fit to do so. Sec. 7. *c*. Assent or dissent to the sale or exchange of parish property. Sec. 10 (11). *d*. Exercise the power of veto on the expenditure of the Parish Council. *e*. Exercise the veto on the action of the Parish Council in the matter of closing footpaths and roads.

2. *The Parish Council.*—In parishes with over 300 inhabitants there *shall* be a Parish Council. This will affect some 7,000 parishes in the country, with from 300 persons upwards, and here one of the first evidences of harum-scarum preparation is manifest. The nominations for members of the Parish Council are to be made at the Parish Meeting, Sec. 3 (5); and in the 1st Schedule, par. 6, the following extraordinary provision is made:—

"If the number of candidates does not exceed the number of Councillors to be elected, the chairman shall put the names of the candidates to the meeting, and if those candidates are accepted by those present at the meeting, they shall be deemed to be elected *unless a poll is demanded.*" What is the object of a poll under such circumstances? It passeth the wit of man to decide.

The Parish Council having been elected, its functions are shortly as follows:—*a*. Appoint overseers and assistant overseers. Sec 5. *b*. Hold parish property. Sec. 5 (2 *c*). *c*. Maintain closed churchyards. Sec. 6 (*b*). *d*. Undertake the duties of overseers "with respect to appeals by them in respect of the valuation lists, *poor rate*, or county rate, or the basis of the county rate." Sec. 6 (*c*, 1). Overseers act in appeals to settle the county rate, but the valuation lists and poor rate cause the overseers to be appealed against. *e*. Provide parish books, vestry room, or parochial office, parish chest, fire engine, fire escape, or matters relating thereto. Sec. 6. *f*. Hold parish property, village greens, allotments for recreation grounds or gardens. Sec. 6. *g*. Power to dispose of parish property (that is now vested in the guardians). Sec. 6. *h*. Deal with the allotments question, both by way of making representation and by managing them. *i*. Execute adoptive Acts when the Parish Meeting adopts them. Sec. 7 (6) The above are mandatory.

In Sec. 8 (1) is a list of additional powers, which are similar to powers now exercised by urban authorities, as to acquiring buildings, lands, and the execution of works; but one of these additional powers is extremely novel, viz., "to utilise any supply of water within their parish." It is a well-known axiom that there is no right in *under*ground water; if this is allowed to stand there will be *no* right in *over*ground water, and a Parish Council may abstract water from any mill-stream, to the injury of the mill-owner, and pay no compensation. The clause does not even say for what purposes the water is to be utilised, whether for a public water supply or for providing a boat pool for the edification of the juvenile parishioners.

Another clause in this section is equally incomprehensible. The Parish Council is to have power to acquire any right of way, easement, or other right, whether within or without their parish, "the acquisition of which is beneficial to *any* inhabitant of the parish." Where will this land the Parish Councils? As it stands it means that any Parish Council in the kingdom may acquire rights of way over the Lake Hills, or Clifton Downs, or any other holiday resorts which are undoubtedly beneficial to many inhabitants who do not reside in the parishes where such rights of way exist.

These are simply a couple of instances of the harum-scarum nature of the Bill, and time alone prevents others being pointed out.

With these two bodies the members of this Association will have little or nothing to do, fortunately, as the spending power of the Parish Meeting is *nil*, and that of the Parish Council is to be limited to one penny in the pound, unless by sanction of the District Council a loan is obtained, the repayment of which may exceed the "penny."

The third authority to be established is *The District Council*, and it is with the constitution of this, and the powers with which it is to be invested, that we are most concerned.

And here at the outset the author cannot but say that a great opportunity has been lost of enunciating a bold and comprehensive scheme of local self government. A complete severance should be effected between Poor Law work and, if the word may be so applied, "Municipal" work. While the area of the Poor Law Union will, in the majority of cases, form a very convenient unit for the District Councils, the composition of those Councils is open to serious objection. With the union area as the unit, many of the new District Councils will be large and unwieldy, and a smaller Council selected from the whole area, without any reference to Poor Law work, would have produced a more representative type of Councillors and a more business-like Council.

The "Municipal" work of one Rural Sanitary Authority, within the author's knowledge, is admirably managed by a Committee of eighteen members, under the powers of the Public Health Act, 1875. By this Bill the District Council will consist of about fifty-eight members.

The rural District Council will be the Rural Sanitary Authority under another name, but, by the abolition of highway authorities of every description in rural districts, with enormously increased work, the urban District Council will be simply the Local Board, Improvement Commissioners, &c., with a new title. The Bill does not affect these to any material extent, beyond abolishing the present mode of election and substituting the routine of the Ballot Act. These may be passed by, well knowing that the interests of their Surveyors are safe.

But with rural District Councils the changes proposed are far-reaching and important. By Sec. 189 of the Public Health Act, 1875, every urban authority "shall" appoint a Surveyor, but Sec. 190 omits that officer in the list of those to be appointed by Rural Sanitary Authorities, and here the influence of this Association should be brought to bear, to induce the Government to abolish the distinction between urban and rural districts, in that particular point at least. The Surveyor will be as much needed under the rural District Councils as under the urban district Councils, and although from motives of so-called economy some Rural Authorities do not appoint a Surveyor, under this Bill it ought to be compulsory.

By the Act of 1847, the Surveyor was not removable at the pleasure of the Authority appointing him, without the consent of the Central Authority, and, while not advocating "protection," there ought to be some means of preventing Surveyors being made the butt of interested persons who get on the Board.

The Public Health Act (London) has prescribed a qualification for inspector of nuisances, or, as he is to be called in the future, "Sanitary Inspector," while the Medical Officer of Health must have the usual diplomas; and in the interest of the members of the profession generally, the appointment of properly-qualified Surveyors should be included in the Bill now before the House.

The gradual assumption of urban power by rural authorities, particularly in the matter of buildings, brings the Surveyor into conflict with the jerry builder, and it often happens that if the jerry builder does not get on the Board himself, he has a friend who is a member, so that the Surveyor is severely handicapped, and in endeavouring to do his duty is branded as a tyrant, and unless well supported by the Board is sure to have to give way or lose his situation. Surveyors ought not, in the interests of the public health, to be placed in this position, and some representation on the subject should be made to the Secretary of the Local Government Board.

The amount of work to be thrown upon existing Surveyors to Rural Sanitary Authorities, of whom there are nearly forty in this Association, will be

enormous, and at the first glance it seems that their position will be improved, more especially in those districts where the roads are at present under the Parish Surveyor. Where Highway Boards, &c., exist, the Surveyors of those Boards will become officers of the rural District Council (Sec. 64), and until such officers resign or are promoted the work will go on almost as at present.

The care and maintenance of the enormous length of district roads which will devolve on the District Councils will necessitate a largely-increased staff, both clerical and working, and the Rural Sanitary Authority members of this Association must be prepared to consider the best means of carrying on the work of road maintenance, which will involve a greater amount of friction than all the other duties of the office.

Time will only permit of some few of the anomalies of the Bill being pointed out, which are more apparent in the matter of highways than almost any other part.

The Parish Council is invested with the duty of repairing and maintaining footpaths. Sec. 12 (2). By the transfer of the power of the Highway Acts to the District Councils, this same duty is imposed on them. So that there will be two Councils invested with the same duty, and the usual result of dual authority may be expected.

Sec. 12 (2) is very vague. By the Local Government Act, 1888, a District Council may undertake the repair and maintenance of the main roads, but until the Warminster case this did not include footpaths. Now the Parish Councils "may undertake," although the Act of 1888 empowers the District Councils to do it, and although the maintenance may be undertaken by the Parish Council, there is no provision for payment, and with the limit of expenditure, Sec. 10 (ii.) it amounts to a prohibition of the work being done, unless the words of the Bill may be read as authorising a payment from the County Council.

The most recent case on Highway Law is that of Eyre and the New Forest Highway Board (1892), in which it is laid down that the inhabitants of a parish have not only no *duty* but no *right* to repair a road informally dedicated since 1835, and it is desirable that the present Bill should be so amended as to confer on District Councils a power to adopt the liability to repair at large as that now possessed by an urban Authority.

Again, the powers under the Highway Acts of the inhabitants of rural parishes in vestry assembled are transferred to the Parish Council. By Sec. 24 (1), which incorporates Sec. 144 of the Public Health Act, 1875, they are transferred to the District Council.

As showing the difficulties created by this dual transfer, suppose an owner wishes to dedicate a new highway to the public, under Sec. 23, Highway Act, 1835, the proposal will be made to the District Council as Surveyors. If it were held that the powers of the vestry were transferred to the Parish Council, it would then become the duty of the District Council to remit the proposal to the Parish Council, and if the Parish Council deem such highway not to be of sufficient utility to the inhabitants of the said parish to justify its being kept in repair at the expense of the said parish, the dedication owner may be summoned by the District Council to appear before the justices at special or petty sessions, "and the question" as to the utility, as aforesaid, of such highway shall be determined at the discretion of such justices. On the other hand, if the District Council exercise the power of the Vestry they will have full discretion to determine the question of public utility, as urban Authorities now have in like cases.

Further, by the Local Government Act, 1888, Sec. 11 (4), rural District Councils may be called upon to undertake the management of main roads, another argument in favour of the new Surveyors being men having a recognised qualification.

From an experience of twenty years in the work of a rural district, the author is very strongly of opinion that the dividing line in the powers conferred upon urban and rural District Councils should be all but abolished. The conditions of healthy life in the country are of equal importance with those in the towns. There is one place in Lancashire (Childwall), with thirty-two houses and 199 population (census 1891), which has all the powers of a Local Board with 30,000 persons, simply because they adopted the Act of 1848, while many villages in rural districts, with populations of 1,000 and over, cannot undertake one of the most elementary duties of urban life without special consent of the Local Government Board, and this broad distinction exists in nearly 13,000 parishes in 574 Rural Sanitary Authority districts.

The Bill wants recasting. The clauses relating to Parish Meetings and Parish Councils are so mixed up that it is difficult to separate them, and even Mr. MacMorran, Q.C., eminent as he is in "Public Health" Law, is obliged to confess that some of the clauses are unintelligible and *redundant*.

Before closing this paper, the author ventures to make the following suggestions, in the hope that the Council will see its way to make representations to the President of the Local Government Board, with the view of inducing him to so amend the Bill that it may be more in harmony with the requirements of the present day:—

1. The following sections, *inter alia*, of the Public Health Act, 1875, to be incorporated:—42, 43, 44, 45, relating to scavenging; 149, vesting of streets, &c., in urban authority; 157, power to make bye-laws respecting new buildings; 158, as to commencement and removal of work contrary to bye-laws; 159, what is to be deemed a new building; 160, Towns Improvement Clauses; 161, lighting streets; 171, Towns Police Clauses Act, 1847.

2. Part III. of the Public Health Acts Amendment Act, 1890, to be compulsory, and not optional, as at present.

3. Rural Sanitary Authorities shall appoint as Surveyors men having an acknowledged qualification. Such Surveyors not to be removed without sanction of the Local Government Board.

4. Surveyors to be compelled to report to the Local Government Board annually, and to point out any case where the District Council fail to carry out any part of their duties.

5. Sec. 120, Local Government Act, 1888, to be inserted.

In the discussion which followed,

Mr. Massie (Wakefield Rural Sanitary Authority) said he was sure all Surveyors to Rural Authorities must feel that the Bill as at present proposed was one which could never be accepted as a settlement of their position. He agreed with Mr. Godfrey that a great opportunity had been lost in not separating the Poor Law from sanitary work. He had spoken to nearly every member of his Authority, an Authority having under its control a population of nearly 40,000, and they said it was almost impossible to undertake Poor Law and sanitary work. Another matter which he thought utterly wrong was the proposal to allow the representation of townships to continue unchanged. In the Wakefield district there were two townships of fifty or eighty population, each returning one member; and there was one large township of 12,000 returning only two members, so that those two small districts practically nullified the representation of 12,000 persons. Then in the West Riding there were twenty-four Local Boards with populations of less than 2,000, with full urban powers. In his district, with a population of between 35,000 and 40,000, they had to go begging cap in hand to the Local Government Board for every power. Another serious matter affecting their future was that under this Bill, County Councils had power to alter existing districts. He referred more particularly to the proposal that in future every parish should be the centre of a district. He totally disagreed with that, for two reasons. Under the Bill, the County Council, subject to the sanction of the Local Government Board, could take 10,000 or 12,000 persons from his district and add to the City of Wakefield or Borough of Morley; and, then, secondly, the parish boundary was not always the most suitable boundary for a district. The County Council for the West Riding of Yorkshire had passed a resolution in favour of the ridge land of the watershed being the boundary of the parish. In conclusion, he reiterated the hope expressed by Mr. Godfrey that the Council of the Association would watch the future progress of the Bill with the greatest attention.

Mr. Hooley (County Surveyor of Nottinghamshire) said that as one who suffered from the connexion of Rural Sanitary Authorities with Boards of Guardians he would like to endorse Mr. Godfrey's remarks as to the inadvisability of mixing up Poor Law relief with sanitary work. Pet schemes of his own which had passed committees of the Rural Sanitary Authority had been quashed on going before the Board of Guardians, on the ground of expense.

Mr. Davis (Aston Manor) said he entirely agreed with Mr. Godfrey that the Bill needed recasting. As representing one of the four largest Urban Sanitary Authorities in the country he had carefully read the Bill to see what it would do for them, and all he could see was that they would be called a District Council.

Mr. Campbell (Stratford-on-Avon) suggested that it should be an instruction to the Council of the Association to take the Bill into their consideration and make such representations to the Local Government Board as they saw fit.

Mr. Savage (East Ham) said that so long as the Local Government Board drew Bills of this kind without the advice of the Association they would have intricate and muddled legislation.

The President, in closing the discussion, said it was the first time the Association had had an opportunity of discussing a Bill before it had actually become an Act of Parliament, and he thought Mr. Godfrey had done very good service in this respect, as it would give an opportunity for Members of Parliament to see the difficulties with which they were confronted, and enable them to make such alterations in the Bill as would be necessary to provide for its proper working. He assured Rural Surveyors that the Parliamentary Committee, with the assistance of Rural Surveyors, would give this Bill their very careful consideration.

A vote of thanks having been accorded to Mr. Godfrey for his paper, that gentleman briefly replied.

Electrical Mains and Methods of Laying Them.

Mr. C. H. W. Biggs, M.I.E.E., read a long and interesting paper on this subject, in the course of which he said:—

The members of this Association are responsible for the condition of the roads, streets, and pavements of the kingdom—hence, whatever interferes with these must be considered of interest; but in addition to the mere maintenance of streets, one of the most onerous duties of the Borough Engineer is the giving advice to his Council in matters electrical. As one who is doubly interested in these matters—on the one hand from the municipal, and on the other from the electrical standpoint—I am naturally anxious to elicit information as to the exact conditions each party requires fulfilled. If the municipality—as I hold it ought to do—undertakes the production and distribution of the means to provide for the artificial illumination of the district over which it holds sway, it will have full and complete control of the generating stations and the system of distribution.

With the generation of electrical energy I have little to do in this paper, except to assume that it will be generated either on the high or the low pressure system. If generated on the high pressure system, it may be either to give continuous or alternating currents. If the alternating system is adopted, most probably a different kind of main will be used than if on the continuous current. The reason of this may be explained. According to the researches of Lord Kelvin, Oliver Heaviside, and others, the phenomenon which we call current in alternate-current work affects only the external part of the conductor. The slower the alternations, the greater the sectional depth of the conductor that takes part in carrying the current; the more rapid the alternations the less the depth of conductor so acting. Hence the view has arisen of late years that the conductor is more of a directrix than anything, and given sufficiently rapid alternations, the action is a mere surface action between the dielectric and the conductor. Thus the conductors for alternate currents are sometimes hollow metallic tubes—in fact, copper tubes—in order to obtain a large surface area. Mr. Ferranti was, I think, the first to arrange the outgoing and the incoming tubes concentrically in his mains from the Deptford generating station to the Charing Cross and other districts supplied from Deptford.

It will be best to avoid as far as possible the discussion of purely electrical matters, except so far as they bear directly upon the object of this paper. Assume, then, that we wish to generate a given quantity of electrical energy and utilise it at a certain point. What difference will it make to our mains if it is generated under high pressure or under low pressure? The heat developed in a conductor is given by the well-known formula C^2R—"current squared" × "resistance"; from which it is seen that a small increase of current may mean a considerable increase of heat. We neither want our mains melted, nor in fact, made hot; we want the heat evolved at the lamps, for elsewhere it means loss. The heating of the conductor increases the loss in another way, as it also increases the copper resistance. By generating under high pressure we obtain our quantum of electrical energy with little current, the energy being represented by the product of "current" × "pressure." In the formula C E, C = current; E = pressure. Increasing the pressure means decreasing the current, and a small current

means a small conductor, which, as copper is generally used, means a saving of copper. On the other hand, the current will traverse any road it can find, and it goes over these roads in quantities inversely to the resistance to its progress these roads offer. In our operations we want it to go over a particular road, and not meander away in other directions, being thereby lost for our work, not to mention the danger arising to both life and property from its being where it is not wanted. With high pressure, then, we have to be exceedingly careful as to the insulation of the conductor. Hence, while we gain by saving copper, we lose something by having to use more costly insulation. Mains must be constructed so as to avoid loss from heating and loss from leakage. There is still another point to which attention must be directed. If we use our electrical energy for lighting purposes, we want the current to be as large as possible at the point of use, because its value for the object in view varies as its square. The electrical energy may be generated at a high pressure and a small current, but it is used at a lower pressure with larger current. If our apparatus were perfect we might convert 2,000 units of pressure (called volts) × 2 units of current (called amperes) into the equivalent energy: 100 volts pressure × 40 amperes current. The piece of apparatus for such conversion is called a transformer. Some of the advocates for high pressure would supply a transformer to every house; others prefer a transformer to a group of houses. Whichever plan be adopted, the cost of transformers has to be considered. This extra piece of apparatus must also add to the cost of maintenance. Further, unless the transformer be absolutely cut out of the circuit when it is not required in the production of light, it is constantly using up more or less current in order to keep the iron core magnetised, which is another source of loss.

Summarising, high pressure requires less copper in the mains, but more and better insulation. It requires the use of transformers, either in every house or at sub-stations for a group of houses. These transformers have to be paid for initially and have to be maintained; they also lead to a smaller or greater constant loss of current. The great advantage of high pressure is in enabling the central station to be erected in places where land costs less than where the position is more rigidly defined, where fuel and water are more cheaply obtained, and other similar advantages. Low-pressure working requires the central station to be at hand (according to the calculations of Messrs. Crompton and Wright, the distance must not exceed from 2,000 to 2,500 yards), and it needs more copper in the conductors. As generally adopted, low pressure (the limit of which is 500 volts) also requires transforming, but in a different way to that adopted with high pressure.

The author then went on to describe the three-wire system, and the bare-wire system, now being carried out by Mr. Crompton at Hove. He also dealt in great detail with the construction of concrete culverts, drains, insulating gear, junction and house-service boxes, and other matters; but his remarks on these subjects, being very fully illustrated by diagrams, cannot be intelligibly summarised in the absence of the diagrams.

In the discussion which followed,

Mr. H. P. Boulnois (Liverpool) moved a vote of thanks to Mr. Biggs. He said the paper would be exceedingly useful, not only to those who had charge of electric stations under Corporations, but also to those who had to watch over public companies. Mr. Biggs had wisely dealt, not with the generation of electricity at the works—with which as Municipal Engineers they had little to do—but with the best means of conveying the electricity from the generating station through the streets to the consumer. As to the cost given of laying mains, he wished to ask Mr. Biggs if he had included anything for the proper insulation of the cables; and whether this did not enter largely into the question of maintenance. Mr. Biggs had given three methods of insulation, but he had omitted to mention a new system—new in this country, though largely used in America—that of prepared paper. The paper, soaked in oil, was wound round the cable and then encased in lead, as in Messrs. Siemens's process. With regard to the electric conductors at Hove, Mr. Biggs gave them the specification under which they were laid, but not the depth of the mains. He took it they would not allow any of these wires to be laid within a few inches of the footpath. He had prepared standard conditions for Liverpool under which they compelled the company there to lay the electric light mains and services through the streets. The feeders and distributors had to be laid under footways a depth of 1 ft. clear, and under carriageways 2 ft. and 2 ft. 6 in. in the clear. With reference to the feeding and service boxes it was essential they should be hermetically sealed to prevent moisture getting into the boxes. If moisture got into these boxes they would have a short circuit, or a fire, or an accumulation of gas, which went off with an explosion somewhat terrifying to passers-by. They had had two or three of these explosions in Liverpool, and the police were quite alarmed by them. They had now replaced the old boxes with new ones fitted with porcelain receivers, into which any moisture ran. These receivers were inspected once a month, and any moisture which might have found its way inside was wiped out. Since this had been done they had had no further trouble from explosions.

Mr. Silcock (King's Lynn), who seconded the vote of thanks, said there were one or two points upon which he wished for further information. One was as to a system of oil insulation which had been introduced. Mr. Boulnois had mentioned a paper insulation, which was practically the Ferranti system, but there was also an oil insulation in which the cable was enclosed in oil, and had no solid casing at all. The depth of the insulating channels was also an important point, especially in connexion with the Crompton system. The bare-copper cables strained in channels took up a great width and depth of the roadway in large towns, where there were a number of pipes for gas, water, and hydraulic power laid under the roadways. and it very often happened that sufficient space could not be obtained for channels on the Crompton system. He believed that at Bradford they had laid covered cables with merely a plank over them to prevent workmen on the roads picking or putting a shovel into them. That was the most simple method of cable laying, but whether it would be permanent and efficient remained to be seen.

Mr. Cox (Bradford), said that the information given in the paper would have been of great value to Bradford if they could have had it before their cables were laid. The cables were laid under the ridge of the causeway without any protection beyond a ¾-in. board laid on the top as a sort of warning to any excavator who had to dig there. Of course the wire was insulated with a covering of composition. They had found from stern experience that it would have been very much better to have had a channel or culvert either in iron or brickwork, and they would have saved a good deal of money in consequence. The streets had had to be taken up twice, and they were having to take them up again to introduce the three-wire, or, perhaps, the five-wire system. A discussion was taking place between Mr. Shoolbred and Mr. Baynes as to laying the three- or five-wire system. The Committee, in their dilemma, submitted the matter to Lord Kelvin, who supported Mr. Baynes in the three-wire system, but the Committee had asked his lordship to visit Bradford, and go over the system before finally deciding. Whether the three- or five-wire system was adopted, there would be a better plan for laying the cables under the street, so as to avoid the expense and inconvenience of taking up long lengths of mains.

Mr. Hall (Cheltenham) said that the difficulty of fixing a depth for laying cables was that in some towns the cellars were not only under the houses, but under the streets.

The vote of thanks having been accorded,

Mr. Biggs, in reply, said he believed the system of oil insulation was introduced by Mr. Brooks, of Philadelphia. He had not mentioned the system because it had not been introduced to any extent in England. With regard to insulation by oiled paper (referred to by Mr. Boulnois), he did not think it had come into use in this country. [Mr. Boulnois: Yes.] Not to any great extent; and he did not like to take everything for granted that came from American sources. Mr. Ferranti used waxed paper, which was a paper system, though a modified one. With regard to the depth of the cables in the roadway, he thought that would vary with the number of wires, to a considerable extent. A depth which would do for three wires would not do for five, and he thought Mr. Crompton had to modify his system in regard to the requirements of each particular case. There was great difficulty in the way of fixing any depth for cables, owing to the number of pipes laid under the roadways.

The President, in closing the discussion on this paper, said this question of electricity was one which in future would demand a great deal of attention from them as municipal engineers. They were upon the very fringe of electricity at present, but at any time they might be called upon to advise their Corporations—not upon some great installation, for which they would call in an expert electrical engineer, but upon the laying of the cables in the streets. Mr. Biggs's paper gave them a great deal of useful information upon this point.

Mr. Robert Hammond, M.Inst.C.E., followed with a paper on "Municipal Electricity Works," but we must defer notice of this and of some other papers until our next issue.

THE SURREY ARCHÆOLOGICAL SOCIETY.

GUILDFORD, Compton, and Loseley were the places visited by the members of this society this year, and on Wednesday, July 26th, about one hundred of them and their friends assembled at Guildford. Many arrived by early trains, and inspected the castle and other buildings of antiquity, such as Abbot's Hospital, but as these were visited by the Society in 1886, and described in the *Builder* of August 14 that year, they need not again be referred to, further than to say that since then the castle and grounds have come into the possession of the Corporation of Guildford, and the grounds have been laid out, and many improvements made, notably a circular iron staircase constructed to the top of the castle keep, which works have been executed under the superintendence of Mr. Henry Peak, architect, Guildford.

Carriages were in waiting at 1 p.m., and took the party to St. Catherine's Chapel, where Mr. Ralph Nevill, F.S.A., read a paper. He said these ruins stood on the well-known ancient Pilgrim's Way, and just above a ferry over the river Wey; the pilgrims passed through here from Southampton to the shrine of St. Thomas à Becket at Canterbury. The chapel was no doubt built early in the fourteenth century, and it would be noticed from the remains of the springing of the traceries of the windows that they must have been similar to those in the Chapel of St. John the Baptist at St. Mary's, Guildford. From St. Catherine's the members and visitors drove on to Compton, and took light refreshments at the "Harrow" inn.

Mr. J. Lewis André, F.S.A., read a paper inside Compton Church, which, he said, was mentioned in Domesday Book; it was famous for its double sanctuary. Over the inner chancel arch was a kind of gallery, said to be the oldest in England, and which will be found illustrated in "Parker's Glossary of Architecture," and thus described:—

"At Compton Church, Surrey, there is a vault over the eastern part of the chancel, on which is an upper floor, which in fact is a gallery, and has an open front of woodwork, which, like the vaulting, is of Transition character from Norman to Early English (*circa* 1180); this was used as a chapel, and had an altar in it, and the piscina still exists in the south wall."

There is a plain chest made of cedar, lately used for a coal-box. A fenestella is also illustrated and described in "Parker's Glossary." Mr. André also described the monuments, registers, and plate; the latter will be found illustrated and described in Vol. x. of this Society's "Transactions," by the Rev. T. S. Cooper, one of the hon. secretaries.

From Compton Church the party proceeded to Loseley Hall, and were cordially received by Mr. More-Molyneux, the proprietor. Here Mr. Ralph Nevill read another paper. The Manor House was built by William More in 1568; he was an important person in Surrey, and was alternately Member for Guildford and the County, owner of the pocket borough of Haslemere, and was twice Sheriff of Surrey. The house took six years to build, and was erected for what now appears the ridiculously low sum of 1,560*l*. There were portraits of James I. and his Queen, Edward VI., Mary Queen of Scots, and Queen Elizabeth. The bedrooms occupied by James I. and his wife while on a visit here were inspected. The company soon after returned to Guildford, where, after a collation at the "White Lion" Hotel, they dispersed.

Mr. Mill Stephenson, hon. sec., announced five new members.

THE DONALDSON SILVER MEDALLIST, 1893.—The highest Certificate and Prize—the Donaldson Silver Medal of the year—has, we are informed, been awarded to Mr. Arthur Baldwin Hayward (son of Mr. C. Forster Hayward, F.S.A., F.R.I.B.A.) for his studies in the Fine Art Course of Architecture at University College.

Illustrations.

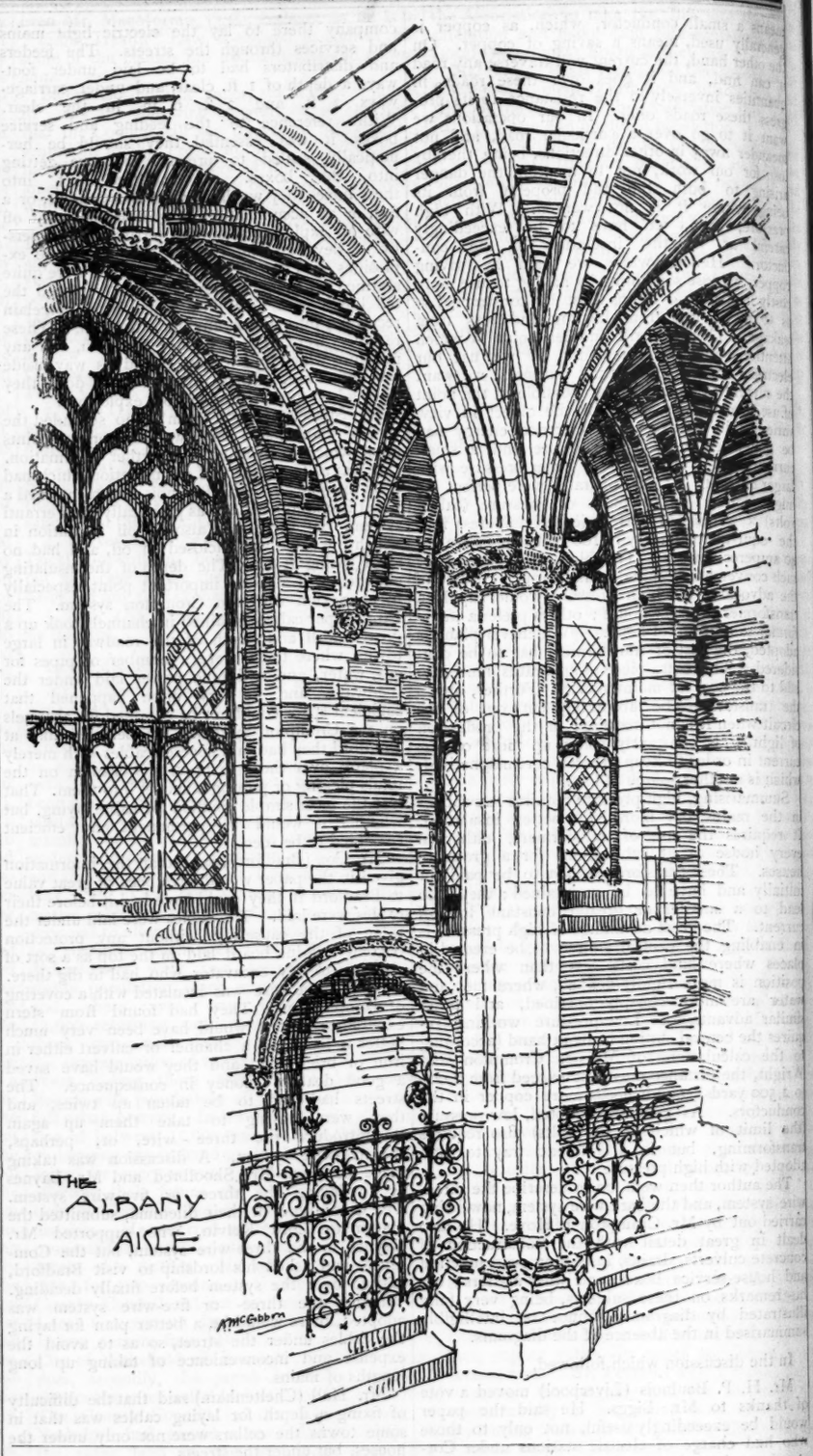
ST. GILES'S CATHEDRAL, EDINBURGH.*

THE Cathedral of St. Giles is a building that externally is seen to best advantage at a distance. Its crown then dominates that part of Old Edinburgh with fine effect. A nearer view that reveals the whole church is disappointing, for there is little to see but uninteresting symmetry and feeble detail expressed in smooth ashlar work; and what is lacking in architecture is not condoned for by antiquity, for all visible, the tower excepted, is of this century's date.

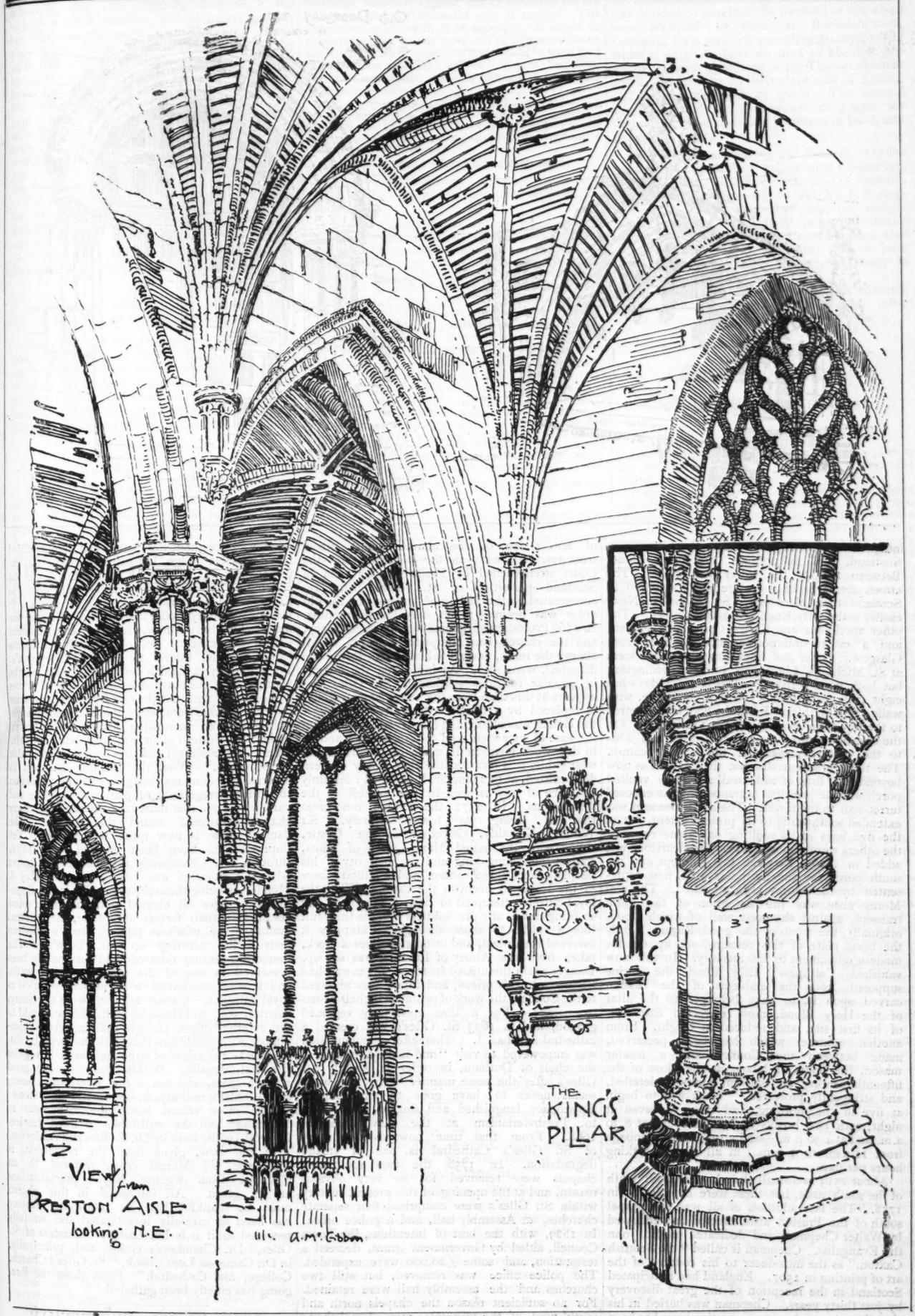
As a Cathedral, St. Giles's must be accounted modern. Originally simply the parish church, raised to collegiate rank in 1467, only in Charles I.'s time did the "gude toun" become the seat of a bishopric and so attain to city dignity. All this notwithstanding, when the history of the church is known, it is marvellous that anything of architectural interest should have survived, and one must be thankful for what remains. The interior makes some amends for the poor outside, and shows much of interest and intrinsic beauty. The restoration effected within the last twenty years removed the various partitions that had been permitted to enclose parts now thrown open, and so restored in some measure of integrity, not merely to the city a place of worship, but to the nation an historical monument.

St. Giles, the patron, was a sixth-century saint, a native of Athens. Only two other churches in Scotland bear his name, Elgin and Ormiston. In England no less than 146 are said to be dedicated to him. The hind that was the saint's companion appears as one of the supporters in the city arms. There are records of a church in Edinburgh as early as the ninth century, belonging to the monastery of Lindisfarne, Holy Island, Lothian then being included in the province of Northumbria. In 1120 a new church was erected by Alexander I., an interesting relic of which, a doorway, survived down till 1797, when, during some alterations, it was wantonly destroyed. An authentic illustration shows it to have had a semi-circular-arched head of three orders, richly carved, all of the customary Norman type. This doorway had escaped the destruction which overtook the church in 1385, when Richard II. ravaged the land, burning Melrose and Dryburgh Abbeys, as well as the town of Edinburgh and its church. At that time, however, the Abbey at Holyrood was spared. Another and larger church was at once begun. Some may believe that incorporated within the present piers of the tower there are portions of Norman work, but it is unlikely: certainly nothing of such a date is visible, and during the most recent operations, when the whole floor of the church was raised, no trace of old foundations even were met with. The fourteenth-century church, then, had a nave of five bays, transept, tower over crossing—though not as now seen, for it is a century later—and a choir of three bays, the south aisles of both choir and nave being the wider; and all was stone-vaulted. The peculiarity of the roof of this date over the choir aisles may be noted—a kind of pointed barrel vault. There appears to have been no western door. Before this original scheme could have been completed, an enlargement was made. Five chapels forming an additional south aisle to the nave were begun in 1387. There is still preserved the contract between the provost and community of Edinburgh and the three masons who undertook the work, which is interesting both as being about the earliest specimen of Scottish prose, and also for its fine generality of description, particulars not condescended to: the masons "Shall make and vault five chapels . . . . in a straight line, with the great pillars of the steeple, vaulted in manner and masonry as that above St. Stephen's altar, Holyrood, the which pattern they have seen. . . . . Shall make in each chapel of the four a window of three lights, in form masonlike . . . . and the fifth chapel . . . . with a door in as good manner as the door standing in the west gable there [Holyrood]. The community finding all scaffolding to the work, the foresaid masons doing their craft to the work truly, without fraud, as true men ought to do." The doorway here mentioned was shifted in 1829, and again in 1883, when it became the royal entrance. Originally it stood within a vaulted porch, above which was a re-vestry, lit by an interesting oriel window somewhat similar to that at St. Michael's Church, Linlithgow. A modern reproduction may now be seen in the west gable of the south aisle. These chapels appear to have been vaulted similarly to the nave aisles, but their roofs were demolished in 1829, when the two westernmost chapels were wholly lopped off. As well as on the south, north of the nave aisles two chapels were added by the Duke of Albany and Earl of Douglas, both implicated in the murder of the Duke of Rothesay. This portion remains intact, the windows only being modern. Adjoining was the Norman porch; overhead of it was an apartment reached by a stair now removed, but the door that gave access to it remains as a shallow recess in the aisle wall. About the same time, and eastwards of the Norman porch, other two chapels were built: the dedication of one is unknown; St. Eloi was the patron of the eastmost. Both, it may be said, were destroyed, for it is little more than the site that remains to the St. Eloi's chapel of to-day; it was enlarged in 1829, when its companion was destroyed; in the new vault are preserved some old bosses.

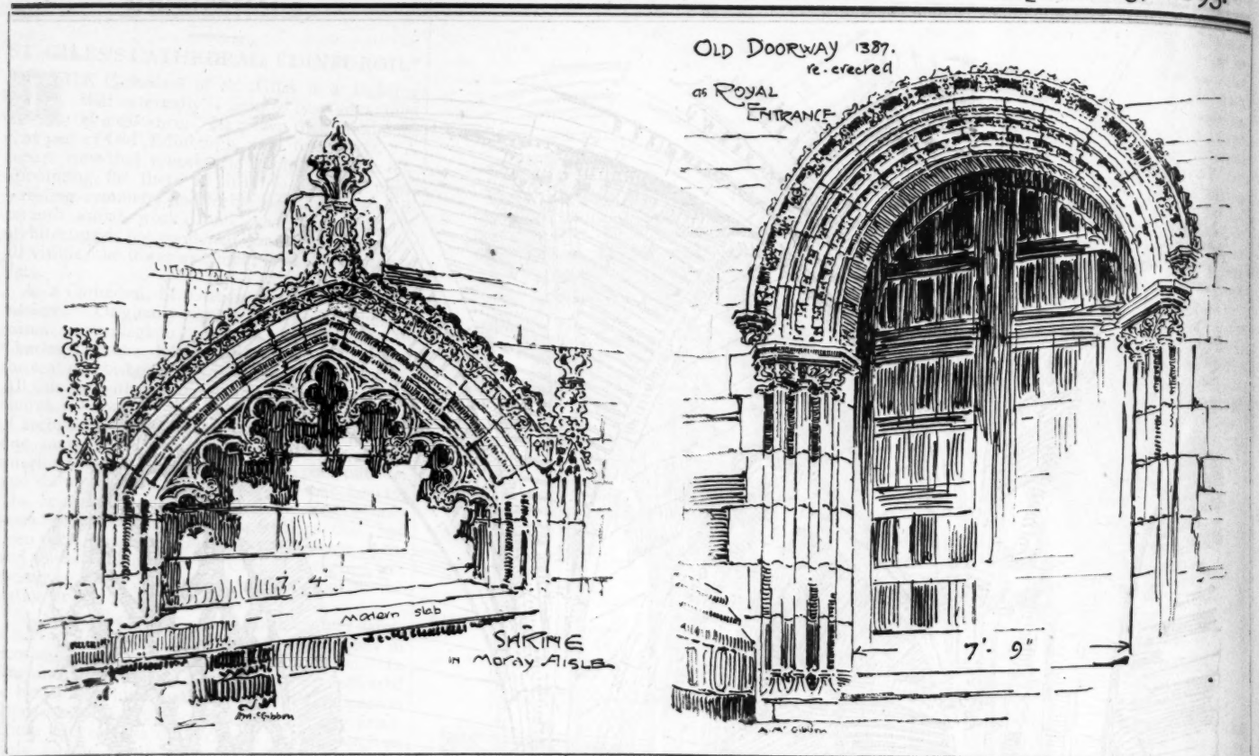
About 1460 the choir was lengthened, the clustered pillars and their responds, higher nave arches, and the richer vaulting of the aisles clearly marking the change. At the same time, the whole vault of the choir central aisle was removed, a clearstory built, and the richer roof erected, still extant; the bosses here—as, indeed, all through the church—are very rich. The added pier on north side is called the King's Pillar, certain heraldic indications on the shields of the King, his Queen, and the infant Prince, carved in the capital, marking it as the memorial of the untimely death of James II. (killed in 1460 by the bursting of a cannon at Roxburgh), erected by his widow, Mary of Gueldres. Another important addition was an aisle south of the choir aisle, erected by the grateful townsmen to the memory of William Preston, who, having in France become possessed of a precious relic—the arm-bone of St. Giles—on his death bequeathed the same to the church. He himself was afterwards



* The series of illustrations of the Ancient Cathedrals of Scotland, which was begun in our issue of July 1, will be continued in the first number of each month, until December next. Particulars of this, and of the series of "Cathedrals of England and Wales," which ended in June last, will be found on page xx.



buried in the aisle named after him, and a commemorative brazen tomb erected. The vaulting of this aisle is very graceful, the long thin stones employed, with strongly-marked joints, helping greatly the appearance. In 1487 St. Giles's became a collegiate church, with an establishment similar, and not much inferior, to that of a cathedral. It consisted of provost, curate, sixteen prebendaries, sacristan, beadle, minister of the choir, and four choristers; this in addition to the chaplains of the various altars, at this time numbering thirty-six. The upkeep of these was largely from the contributions of the various Trade Guilds, each craft having its particular altar, situated either in one of the many built chapels, or having one formed by a space railed off. Still further dignity was conferred on St. Giles's when, three years later, it was declared



independent of any ecclesiastical authority in Scotland, and subordinate to Rome alone. Between 1485-95 the tower was built. The crown seems to be a feature more favoured in Scotland than elsewhere. St. Nicholas, Newcastle, is the only English example known. The other specimens are King's College, Aberdeen, and a rather unimportant one at the Tron, Glasgow. Other and finer examples there were at St. Michael's, Linlithgow, and at Haddington, but both have perished. This of St. Giles's has eight ribs, rising from a tower 30 ft. square, with walls 4 ft. 6 in. thick. From the floor of the church to the top of the stone lantern is 142 ft. 6 in. On the east side a turret stair is carried up, and adds to the picturesqueness of the whole feature. The north transept did not then extend as now beyond the line of aisle wall; a deep vaulted porch was the principal entrance, with an exposed turret-stair to the tower. The south transept was extended southwards to its present extent, but of the five bays of its vaulting one alone remains, the others were removed when the clearstory was added in 1829. Between this transept and the south porch lay the Caithness aisle, now represented by the Moray aisle, so-called. The real Moray aisle was the extension of the south transept, against the west wall of which stood, originally, the tomb of the good Regent. Only the brass plate of this remains, set up on the modern monument to his memory. In this now vanished Caithness aisle stood the shrine supposed, from the emblems of the Passion carved upon it, to have belonged to the altar of the Holy Blood, now re-erected eastwards of its first site, and reduced in height. From another contract which has been preserved, made between the Council and a master mason, the hours of labour at the close of the fifteenth century are known, minutely detailed, and stringently protected. Work was to begin at five in the morning, and cease at seven at night, with two breaks of half an hour—at 8.30 a.m. and at 4.30 p.m.—and a two hours' stoppage from 11 a.m. to 1 p.m.; in all eleven working hours per day.

About 1513 two small chapels were built south of the south aisle, but these were demolished in 1758. The last addition of all was the chapel south of the Preston aisle, erected and endowed by Walter Chepman and dedicated to St. John the Evangelist. Chepman is called "the Scottish Caxton," as the introducer to his country of the art of printing in 1507. England had anticipated Scotland in the reception of the great discovery by just thirty years. Chepman was buried in his chapel in 1532. A commemorative brass has been set up by Dr. Chambers, himself a printer and a munificent benefactor of St. Giles's. The completion of this chapel marks the culmination of the church's prosperity. In 1559 the Reformation brought about the expulsion of the Roman Catholic clergy and the rude handling of not a few of the church's most prized treasures. An eddy in the political tide—the Court strengthened by French troops then in Scotland—permitted of St. Giles's being reconsecrated by the Bishop of Amiens, and the old order was resumed; but only for six months. In 1560 Protestantism gained the final ascendency, and the church was completely cleared of all altars; the relics, and all valuables not lost in the dispersal, were sold. As indicating the change in popular religious sentiment, St. Giles disappears at this time from the town standard, and is replaced by a thistle. After its "purging" the church was subdivided into several, facilitating the ease of preachers and congregations; and as in this work mention is made of repairs to the west gable, it is just possible that if any western door existed, at this juncture it perished; certainly no trace of any is seen in the earliest of the illustrations. In 1571 the church ran great risk of losing its tower entirely. Sir William Kirkaldy, Governor of the Castle, siding with the exiled Mary Queen of Scots, against the young king and the majority of his people, placed three cannon and a military force in the tower to overawe the town. When the loyal citizens attempted to destroy the piers and so bring down all, the soldiers "made the vault like a riddle to shoot through." Happily it survived the ordeal, and in quieter times a clock, taken from the Abbey of Lindore, was set up. Danger again threatened in 1600: the tower had become a town's prison, and injury was reported to the Council, the work of prisoners in their efforts to escape. For a time episcopacy regained ground, and in 1633 St. Giles's was created a cathedral by Chas. I. Thereafter a commission was empowered to visit "and make a draught of the choir of Durham, in order to beautify St. Giles's after the same manner"; but the work seems never to have gone to any length: Episcopacy languished and finally gave place to Presbyterianism at the Revolution in 1688. From that time onwards the story of St. Giles's Cathedral is one of steady degradation. In 1758 the two south-west chapels were removed for no very obvious reason, and at the opening of this present century within St. Giles's were comprised four separate churches, an Assembly hall, and a police office! In 1829, with the best of intentions, the Town Council, aided by Government grant, decreed a restoration, and some £20,000 were expended. The police office was removed, but still two churches and the assembly hall were retained. For no sufficient reason the chapels north and south, west of the transepts, were demolished; the porches north and south were demolished; the south aisle shortened by two bays, and its stone vault removed and replaced by plaster at a higher level. The nave had also its vault removed and plaster substituted—this to gain a clearstory—and the piers whittled down. All windows throughout the church had tracery filled in, of passable design, but painfully thin. All external work was faced with large ashlar, and the cresting of the parapet that an old print shows to have existed previously was used to excess. It was for symmetry's sake that St. Eloi's Chapel was made as we have it now, balancing an apartment east of the transept. So, too, with the Caithness (Moray) aisle, forced to balance Chepman's. For symmetry, a foolish buttress is built at the west gable of the south aisle off the line of arches it should support. At the east front buttresses are built where none were before, that at the north angle obliterating an interesting feature—Our Lady's niche. A western door was also built by Mr. Burn, the architect of this most regrettable "restoration." What the building has lost in external effect one may imagine when he thinks on the former irregularity of plan and sky-line and variety of style that must have marked the many chapels clustered round the church. The damage done is now quite irreparable. Yet improvements have been effected. In 1871, through Dr. Chambers's munificence, a better advised restoration was begun, Messrs. Hay & Henderson being the architects. The internal subdivisions were all cleared out, the nave piers restored to their former amplitude, the internal jambs of the windows refaced, and a western door built, covering up Mr. Burn's. The fourteenth-century doorway had fortunately been preserved in one of the inner partition walls, and it was transferred to its present position as royal entrance. Certain adjuncts were necessary, vestries, &c., and these, as built, distinctly add to the external effect, though suffering from compliance with conditions that could not well be disregarded—the ashlar of large and perfectly regular size that prevails. Within there is some good modern glass, and not a few interesting monuments, chiefly military, in both metal and stone: of the more recent being the monument to Montrose* and the wall-tablet to Lord Justice-General Inglis, both by Dr. R. Rowand Anderson.

In the view, given from the north-east, is seen the old Mercat cross, restored to an elevation from whence Royal proclamations are yet given. All interested in this church must be thankful that its interesting history has been so carefully investigated and so fully recorded as it is in Dr. Laing's "Charters of St. Giles," Dr. Chambers's Guide, and, principally, in Dr. Cameron Lees's book, "St. Giles's Church, College, and Cathedral." From those the foregoing has chiefly been gathered.

NEW CHAPEL, CHELTENHAM COLLEGE.

THE new chapel of Cheltenham College, now

* We gave a double-page view of this monument (specially engraved for us by Mr. J. D. Cooper) in the *Builder* for January 4, 1890.

just begun, is an outcome of the jubilee of the school in 1891. As originally designed, it was to have a north transept, with strangers' gallery, but this was afterwards altered, and the present plan is a simple parallelogram, 163 ft. by 49 ft. 6 in. in extreme dimensions, and 148 ft. 5 in. by 34 ft. inside the main walls. It is in eight bays, groined throughout in stone, the span of the vault being 34 ft. and the height 55 ft., the gables being 75 ft. The seats are to be placed laterally, and the masters' stalls in recessed arches set between the buttresses. The accommodation will be for 650 boys, 50 masters, and 160 visitors. The organ is to be in a gallery over the west door.

The present contract, a little under 10,000*l.*, is for seven bays and a temporary west wall, and includes no carving, statues, or marble paving, and few fittings. The contractor is Mr. Collins, of Tewkesbury. The architect is Mr. H. A. Prothero (Middleton, Prothero, & Phillott).

REREDOS, BRATTON CLOVELLY CHURCH, NORTH DEVON.

THE design for the reredos and figure subject was made by Messrs. Tait & Harvey, and carried out by Messrs. Luscombe, of Exeter. The entire work is in alabaster, polished upon its plain surfaces only. The reredos stands upon a pavement of green and dove marble, effective against the warm colour of the alabaster.

COMPETITIONS.

NEWINGTON PUBLIC BATHS AND WASHHOUSES.—We are informed that the designs sent in in this competition are now on view at the Newington Vestry Hall, Walworth-road, and that No. 7, submitted by Mr. E. B. I'Anson, has been awarded the first premium.

BOARD SCHOOLS, SOUTH SHIELDS.—The South Shields School Board has undertaken the erection of new schools near the Tyne Dock end of Stanhope-road. In response to an advertisement for competitive plans by local architects, eleven sets of plans were sent in. These were duly examined by the arbitrator, Mr. Landless, of Leeds, and he has placed first the plans under the motto "Corridor"; second, "Utility"; and third, "Light." On opening the sealed envelopes it was found that Messrs. Davidson & Bendle were the authors of the designs placed first; and that Mr. J. W. Donald and Mr. W. Hanson were second and third respectively. The total cost of the buildings when completed will be nearly 20,000*l.*

THE LONDON COUNTY COUNCIL.

AN adjourned meeting of this Council was held at Spring-gardens on Friday, the 28th ult., the Chairman, Mr. John Hutton, presiding.

The Boundary-street Improvement Scheme.—The Public Health and Housing Committee presented an important report on this scheme, which affects an area of about 15 acres, part of which has been cleared. The Committee reported that—

"The Architect has submitted sketch plans for dwellings four stories in height, which provides each tenement with a separate scullery, containing sink and copper and disconnecting lobby and private w.c. entered therefrom, with through-ventilation in every room. It is estimated, however, that if the buildings are erected on this plan, the return of 3 per cent. required by the Council's resolution of the 21st of March last cannot be obtained. It therefore becomes necessary either to increase the height of the dwellings, as by this means the additional rents so obtained would compensate for the extra cost in building, or to abandon the idea of self-contained tenements, and substitute closets and sculleries used in common. After careful consideration, we are of opinion that it would not be desirable to adopt a lower standard of sanitary requirements than those already approved, and we therefore propose that one block of the buildings to be erected on the site in question shall be five stories, and the other block four stories in height, the site not lending itself to the erection of five stories throughout. We should state that, in regard to the buildings proposed to be erected on plot A, Cable-street site, the Home Secretary has intimated his disapproval of five-story dwellings on that site. We do not gather, however, that his decision is final, and we trust that when the reasons which led the Council to adopt buildings of five stories have been put before him, he will not insist on an alteration of the plans. It is estimated that in order to insure the erection of the buildings on the Boundary-street plot four stories in height without loss to the Council, the cost of the buildings must not exceed 9,000*l.*, whereas the estimated cost is 11,000*l.* In the case of the four and five-story buildings, however, 12,200*l.* will be available for the buildings, and the estimated cost is 12,500*l.* The difference—300*l.*—will, it is expected, be saved in the carrying out of the work. The requirements of the Council with respect to open space in front and in rear of the buildings will be fully complied with, and accommodation for 272 persons is provided. We recommend—

'That the Council do approve of the erection of four and five-story buildings on the portion of the Boundary-street area lying to the east of Mount-street, and that the Secretary of State be asked to grant the Council permission itself to erect the dwellings.'"

This was agreed to, after some discussion.

The Blackwall Tunnel: Southern Approach Roads.—The Bridges Committee reported as follows:—

"We have to report that we have considered the two tenders referred to us by the Council on the 27th June, for making up the approach roads to the Blackwall Tunnel on the south side of the river, and the construction of the necessary sewers and paving works, as printed in the Council Minutes of the above date. Having given the matter our careful attention, we think, in the interest of the Council, that it is advisable to proceed with the offer made on 20th July, 1892, by Messrs. Pearson & Son, the contractors for the tunnel works, to construct about 1,500 yards of the approaches at the various prices fixed by them for doing the work, making a total sum of 8,952*l.* 6*s.* We recommend—

'That, subject to an estimate being submitted to the Council by the Finance Committee, as required by the statute, the Council do enter into a contract with Messrs. Pearson & Son for carrying out those portions of the southern approach roads to the Blackwall Tunnel referred to in Messrs. Pearsons' letter of the 20th of July, 1892, and at the schedules of prices contained therein.'"

Colonel Ford moved the following amendment:—

"That in the opinion of the Council the report of the Committee is extremely meagre and unsatisfactory, and that the recommendation be referred back to the Committee with instructions to report to the Council at the next meeting on the following points—(1) Whether Messrs. Pearson & Son claim that the work included in the recommendation forms part of the Blackwall Tunnel contract, and whether they so claim as regards the rest of the work for making the southern approach roads, and, if so, the grounds of such claims, and generally what is the position which Messrs. Pearson & Son take up in regard to these approach roads; (2) whether it is necessary that the whole of the southern approach roads should be finished and ready for traffic as soon as the tunnel is completed; and (3) whether, if the Council should hereafter decide to adopt the present recommendation of the Committee, the remainder of the work of making up the roads (being the great bulk of it) would be undertaken by Messrs. Reed, Blight, & Co., the lowest tenderers, and, if so, at what price; or how otherwise the Committee proposes to secure the due execution of the work."

Mr. Campbell seconded the amendment, which after some discussion was rejected, on a show of hands, by a large majority.

The following amendment was then moved by Mr. Lloyd:—

"That the tender of Messrs. Reed, Blight, & Co., amounting to 68,854*l.*, for making the southern approaches to the Blackwall Tunnel be accepted, and that the Solicitor be instructed to complete the contract."

This amendment met with the same fate as Colonel Ford's, and the recommendation of the Committee was agreed to.

Purchase of a Site for a new Asylum.—On the recommendation of the Asylums Committee, it was resolved to purchase 140 acres of the Baldwyn's Park estate, Wilmington, Kent, at the price of 175*l.* per acre, as a site for a sixth County Asylum, to accommodate 1,000 or more patients.

The Bozier's-court Improvement.—Once more the Council had before it a recommendation from the Improvements Committee that the Council should apply to Parliament for powers to widen the southern end of Tottenham Court-road at Bozier's-court, but once more it was decided to postpone the improvement pending an alteration in the incidence of taxation.

After transacting other business the Council adjourned at seven o'clock.

The last meeting of the Council prior to the holiday recess was held on Tuesday afternoon last, Mr. Hutton again presiding.

Finance: The Half-Year's Rate.—Mr. Evan Spicer, in moving the adoption of the report of the Finance Committee, mentioned that after due consideration the Committee were of opinion that it would not be necessary to make any alteration in the rate for the ensuing six months, and the rate would therefore remain at 6¼*d.* in the pound for parishes outside the City.

Proposed Purchase of Tramways.—The Highways Committee presented a report proposing the purchase and lease of the whole of the North Metropolitan Tramways Company's undertaking in the County of London, but after a long discussion the report was referred back to the Committee for further consideration.

The Operations of the Works Committee.—On the recommendation of the Works Committee it was decided to purchase the freehold of the wharf now occupied by them at Belvedere-road, Lambeth, for a sum not exceeding 39,000*l.* The wharf is stated to have an area of about 66,000 square ft., with a frontage to the Thames of about 205 ft., a frontage to Belvedere-road of 220 ft., and an average depth of 370 ft. The Council also authorised the expenditure of 4,500*l.* for timber and other materials for works in hand, and 4,000*l.* for plant.

Office Accommodation for the Council.—On the recommendation of the Establishment Committee, it was resolved to acquire, for the sum of 12,000*l.*, No. 6, Spring-gardens, and to take No. 8, Spring-gardens on lease at a rental of 300*l.* per annum. It was remarked that to build proper accommodation for the whole of the Council's office staff would be much more economical than to have several of its departments scattered about in different buildings.

After transacting a great deal of other business, the Council adjourned at nine o'clock (after sitting for six hours) until Tuesday, October 3.

Correspondence.

To the Editor of THE BUILDER.

HOLBORN TO THE STRAND.

SIR,—The publication of Mr. Shoppee's plan in the *Builder* for July 8 (p. 28), again brings this matter to the front.

It seems to me that Mr. Shoppee's plan shows one of the least practicable schemes that has yet been brought forward. Commencing with the northern end, it will, I think, be generally conceded that it is unnecessary to lay down a new street on entirely different lines, causing a break in the continuity of the very good thoroughfare now extending northwards through Russell-square, when that continuity might be maintained and less expense incurred by widening Southampton-row at its southern end.

Then again, Lincoln's Inn Fields do not afford the best line for a new street, and the proposal to retain the old houses on the western side would not improve the appearance of a brand-new thoroughfare, especially as that particular side, although archæologically interesting, is the oldest and most dilapidated in the square, and the houses would be altogether out of place amongst the new palatial buildings likely to be erected on such a thoroughfare.

Coming to the spur-streets south of the southern circus, they, and in fact the whole of that portion of the scheme, appear to be laid down on most extravagant lines, without any corresponding advantages. The eastern spur running down to the Church of St. Clement Danes is so close to the main street, that no considerable depth would be available for building in either street for the first hundred or hundred-and-fifty yards, leaving awkward pieces, difficult to deal with, which has been too much the case in recent street improvements.

The street leading, as the description says, "directly to the Church of St. Mary-le-Strand," appears to be designed for no other purpose, and whatever architectural interest the church may have, the construction of a new street for the sole purpose of setting it off is unwarranted, and we should be content if sufficient interest is brought to bear to save it from destruction in future street improvements. And further, it is questionable whether a street approaching the church from the north, affording a view from much higher ground, would enable the church to be seen to the best advantage.

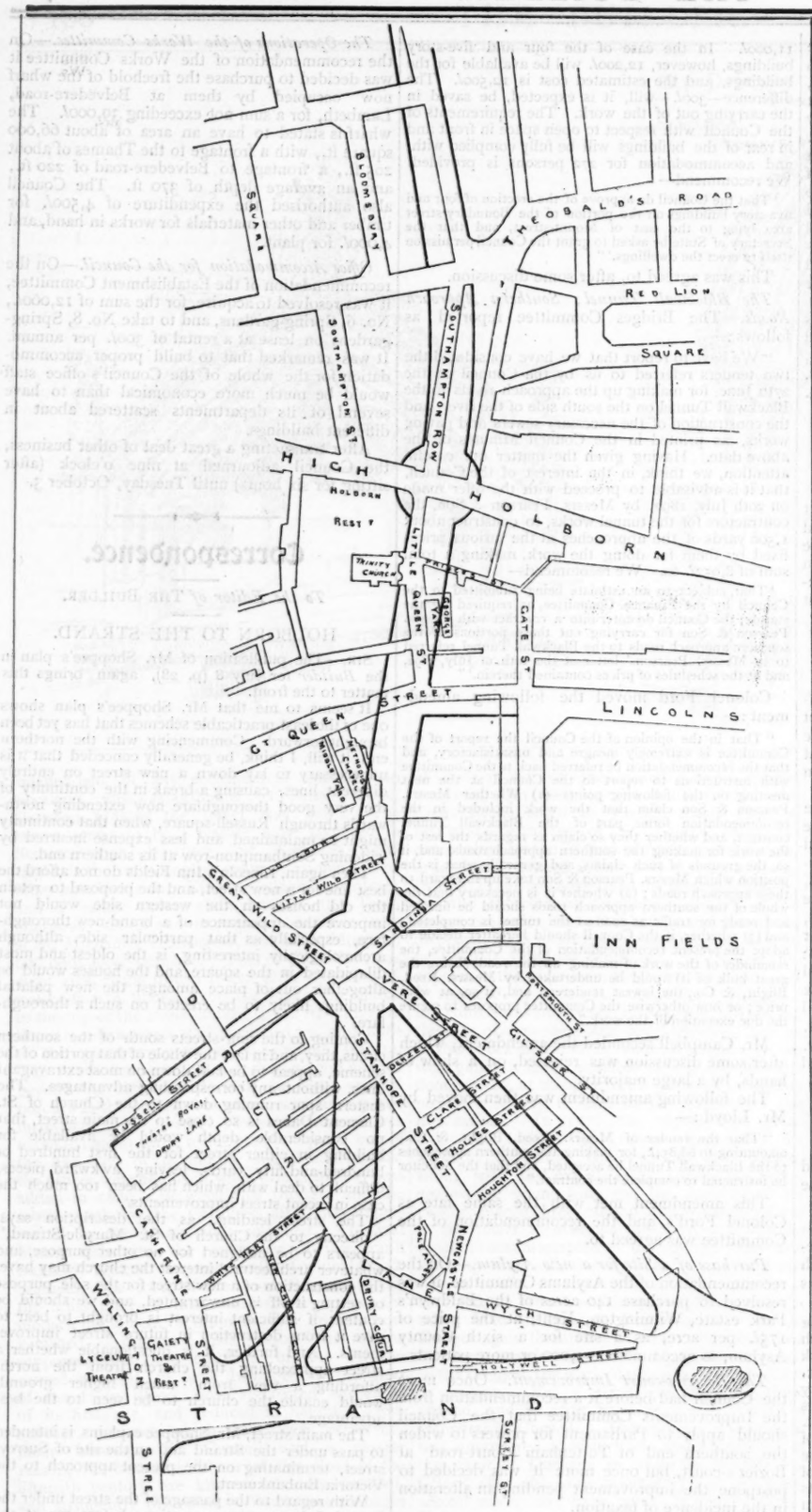
The main street, Mr. Shoppee explains, is intended to pass under the Strand and on the site of Surrey-street, terminating on the present approach to the Victoria Embankment.

With regard to the passage of the street under the Strand, I have not any sections before me at the time of writing, but from an intimate knowledge of the district I feel sure that no workable gradient would be obtainable with such a scheme, and certainly if communication with adjacent streets is suggested, which would be necessary if the thoroughfare is to be of practical value, it would be quite impossible without upsetting the levels over a very large area between Holborn and the Strand in an altogether impracticable manner.

It is to be regretted that Mr. Shoppee has not given sections with his plan, or, at any rate, some details as to levels and gradients so as to show fully what his proposals are.

The outlet to the Embankment cannot be looked upon as good, and owing to the existence of the Temple Station and the tunnel of the District Railway no improvement in the scheme could be made at that point, which is a weak one, and if the scheme were carried out would always be a source of much inconvenience.

The first great object to be obtained in designing a new street in this portion of the metropolis is to



Plan of New Street from Holborn to the Strand, as Proposed by Mr. Harry Assiter.

form a connecting link—or missing link—in the chain of communication between North and South London. The importance of this seems to be overlooked by the authors of many of the schemes for improving this portion of London.

Northwards there is a very good thoroughfare from Holborn through Russell-square, while to the south the thoroughfare commencing at the southern part of Wellington-street, over Waterloo Bridge, affords main road communication to all the southern portion of the metropolis.

These two, then, are the points to be connected, which should be the primary object of any scheme for a new thoroughfare.

I submit a plan showing a scheme which I have laid down, which is at once practicable and, I think, efficient, and affords easy gradients—an absolute *sine quâ non* for a street such as this would be.

Nothing steeper than about 1 in 50 would be necessary, and that only for a short length, and on nearing the Strand, where the sharpest fall in the natural level exists, the proposed road is turned so as to descend sidelong down the inclination, and joins the Strand at the very safe gradient of about 1 in 90. No great interference with existing levels would be necessary, the only one of any importance simply necessitating the lowering of Drury-lane about 4 ft.

There are few unbiassed people who will deny that the County Council's scheme is better as regards its northern half than any of the alternative suggestions which have been put forward.

It will be seen that the northern section of the plan I send is nearly on the same line as the Council's proposal, but the street inclines a little more to the south-west in order to avoid any great interference with the electric lighting works in Sardinia-street, while it still escapes Freemasons' Hall.

From the Circus the street divides into two portions, one going to the south-west and the other to the south-east. These two streets would clear away two "slum" areas—that of Clare Market, and the conglomeration of courts and alleys between Drury-lane and the Strand.

The other suggested improvements can be seen from the plan. HARRY G. ASSITER.

TRADES' UNIONISM AND EDUCATION.

SIR,—I should be glad to be allowed, with your kind permission, to draw attention to the question of the education of workmen, which, from the irrational action of certain Trades' Unions, seems to me to be in a somewhat serious position.

A certain Union—its name need not be given at present—connected with the building trades has issued an enactment that the number of learners, not in receipt of the unionist rate of wages, is to be restricted to one to every three unionists. This proportion they calculate will be sufficient to maintain the required number of workmen, allowing for any expected increase in the future.

Without calling in question the accuracy of this calculation in the abstract, it is evident that such a restriction, by taking no account of the dissolute, the unintelligent, or the indifferent, but by simply regarding each man as a factor—which is the Trades' Union system—will soon reduce the trade to a deplorable condition.

But the practical working of the rule is, to the cause of education, more disastrous still. In all workshops the number of hands employed is very variable, and when any reduction in the number of Union hands is made, a corresponding reduction must be made in the number of learners. Even were these, on discharge, immediately to obtain other places, which is doubtful, moving from shop to shop under fresh masters, and amid strange surroundings, is likely to tend to anything but efficient training; while long periods of want of employment are only too likely.

This is not a fictitious or supposititious statement of the case, though it may appear so to the general public, but comes within the writer's own knowledge.

Further, so strong is this Union, that its decrees are absolute to both masters and men, however irrational or monstrous they may be.

Every one of these, so far, has been towards the encouragement of mediocrity and laziness, and the discouragement of efficient training and zeal.

July 26, 1893. ONE WHO KNOWS.

The Student's Column.

GEOLOGY.—VI.

ROCK FORMING MINERALS (*continued*).

WE will now deal with the minerals of the mica group, confining our attention more particularly to two common varieties—biotite and muscovite. Speaking broadly the micas are silicates of alumina, with silicates of potash, magnesia or lithia, and protoxides of iron and manganese, some varieties are hydrous; so that in chemical composition they vary within wide limits. These minerals are now referred to the monoclinic system.

Biotite occurs six-sided, or as irregular crystals, presenting broad, flat, scaly-looking surfaces, with perfect cleavage; colour, dark green or black; lustre, glittering; hardness, 2·5—3·0; specific gravity, 2·7—3·1; usually known as the magnesia mica.

Muscovite is found also in irregular, or six-sided flat crystals, with perfect cleavage; colour, silvery-white, brownish, yellow, occasionally black; lustre, pearly; hardness, 2·0—2·5; specific gravity, 2·7—3·1; known as the potash mica.

These two minerals (especially the last-mentioned) are exceedingly common in many building stones. They occur in granites and other plutonic rocks, as well as in sandstones; the decomposition of the igneous rocks having provided the mica found in the latter. The student soon learns to recognise mica. It is commonly used in large, thin, transparent slices as a covering for lamp-glasses, and may at once be distinguished from talc—which is used for similar purposes, and is often found in the same rocks—in that it is elastic, whilst talc is not. The minute glittering scales of muscovite can usually be differentiated from those of biotite by their colour—the former, as already stated, being a silvery white, whilst the latter is black, or dark green. Their disposition in stones is frequently a prime factor in regulating the suitability of the materials for specific purposes.

Tourmaline, and especially its black variety *schorl*, is a common constituent of many kinds of rock. It crystallises in the hexagonal system, as

needle-like prisms radiating from a centre, or in a massive form; cleavage, difficult; colour, mostly black (schorl), but sometimes red, green, or blue; lustre, vitreous; brittle; hardness, 7·0—7·5; specific gravity, 2·9—3·3; containing silicate of alumina, with from 4 to 10 per cent. of boracic acid, also magnesia and smaller proportions of phosphoric acid, ferrous oxide, manganese, lime, potash, soda, lithia, fluorine, and water—a remarkably varied and complex composition. It occurs in such rocks as granites and crystalline limestones.

Hornblende crystallises in the monoclinic system; cleavage, perfect; colour, dark green, black, or light brown; hardness, 5·0—6·0; specific gravity, 2·9—3·4. Hornblende may be divided into two groups, according to whether it contains alumina or not. The non-aluminous kinds consist chiefly of meta-silicates of magnesium and calcium, and minor proportions of the protoxides of iron and manganese. The aluminous varieties have silica, alumina, magnesia, lime, and ferrous and ferric oxides. Hornblende is commonly found in metamorphic and igneous rocks.

Augite crystallises in the monoclinic system, is often minute, in stout prisms, or in irregular patches; colour, green, black, or dull white; lustre, vitreous, fibrous, or granular; hardness, 5·0—6·0; specific gravity, 3·2—3·5; chemical composition, silicate of lime, magnesia, alumina, iron, and manganese. Like hornblende it has been divided into two groups depending on the presence or absence of alumina. It is commonly met with in volcanic rocks.

Iron very rarely occurs in the native state except as grains, and pieces which have come to the earth as meteorites. It is mostly found as iron oxide or sulphide, in which conditions it is present abundantly in many rocks. We cannot advise the student too strongly to become thoroughly familiar with the different kinds we are about to describe. The presence or absence of one or other variety in certain materials of construction, will oftentimes determine the suitability of the material for the work in hand. No class of minerals, as a whole, produce such baneful effects on weathering, from an architectural point of view, as do the divers iron oxides, and sulphides. The unsightly brown stains and lines which become apparent on the surface of many building stones a few years after they have been put up; the mottled and patchwork effect; the cracking and splitting asunder of cornices and mouldings; the variation in tint of some red building stones; large holes in roofing slates, and many other things, which the builder usually accounts for by saying that they are part of the nature of the material, are largely (in most cases solely) due to the weathering of one or other of the compounds of iron. The colouring of clays, sands, &c., is mostly derived from some form of iron also. The minerals of the group, however, do not all weather in a similar manner, or at the same rate, some being much more durable than others, and it behoves the student to patiently examine each, in order to determine its relative value. Closely connected with this is the oxidation of iron in its manufactured forms, a subject to which we shall hereafter refer. We now invite attention to the iron oxides, limonite, hematite, titanic iron, and magnetite; and to the iron sulphides, pyrites and marcasite.

Limonite has no definite crystalline form, but generally occurs mammillated or stalactitic, fibrous, or as a thin film encrusting other mineral matter; colour, dark brown or yellow; sub-metallic or earthy; hardness, 5·0—5·5; specific gravity, 3·6—4·0; chemical composition, hydrous ferric oxide. It is the bog-iron ore of authors, and is a very common decomposition product in rocks containing iron. The yellow coating or film covering flints in gravel is generally limonite.

Hematite crystallises in the hexagonal system, occurring as little crystallised granules, but commonly also in massive fibrous forms, or aggregations; cleavage, nearly always indistinct; colour, chiefly deep red, grey, or iron-black; lustre, when crystallised, highly splendent; hardness, 5·5—6·5; specific gravity, 4·5—5·3; chemical composition, peroxide or sesquioxide of iron. It is found lining cavities and fissures of rocks, is an abundant component of mineral veins, and is present in many types of stone. It is known also as specular iron, or kidney ore. Compared with limonite, it is much more brilliant in lustre.

Titanic iron crystallises in the hexagonal system, occurs in thin tabular pieces, or granular; colour, brown; lustre, semi-metallic; hardness, 5·0—6·0; specific gravity, 4·5—5·2; chemical composition, a mixture of the oxides of iron and titanium. It is found in many crystalline rocks, and does not yield so readily to the action of the weather as do the other iron oxides described.

Magnetite, as might be gathered from its name, has strong magnetic properties; crystallises in the cubic system; occurs as octahedral forms, minute irregular grains, or in a massive condition; colour, intense black, opaque; lustre, metallic; hardness, 5·5—6·5; specific gravity, 4·9—5·2; chemical composition, a mixture of ferrous and ferric oxides, often with titanic acid or magnesia. It is an essential mineral of certain lavas and intermediate rocks, entering largely into the composition of some of the decomposed ornamental stones which disfigure our streets. Its steel-like lustre on the surface of polished stones, when fresh, and its granular appearance, are very characteristic. Known also as magnetic iron ore.

Iron Pyrites crystallises in the cubic system, the faces of the cubes being frequently striated, it is also found as spherules with internal radiating structure, and as irregular streaks and patches filling up small cracks and cavities in rocks; colour, pale yellow; lustre, like brass, opaque; hardness, 6·0—6·5; specific gravity, 4·8—5·1; chemical composition, iron disulphide. When struck with a hammer it gives off an offensive odour. This, one of the commonest minerals in the universe, is found disseminated more or less throughout all rocks. When pure, which is rarely the case, it resists decomposition for ages, as witness the cubical iron pyrites so often met with in roofing slate, but when mixed or intimately associated with the mineral next to be alluded to, it is unstable. It may be readily recognised from the other minerals described, from its brassy, or gold-like lustre, but must not be confounded with copper pyrites which it in some respects resembles. The latter, sulphide of copper and iron, crystallises in the tetragonal system, and is not so hard (3·5—4·0) as iron pyrites. Although the colour of the former also is brass yellow, it is generally deeper in tone than the latter, and is often iridescent. Moreover, whilst iron pyrites emits sparks very freely when struck with steel, copper pyrites does not do so. Iron pyrites is known also as mundic.

Marcasite crystallises in the rhombic system; it has the same chemical composition, hardness, and specific gravity as iron pyrites, but is of a paler yellow colour. It occurs abundantly in aqueous rocks as minute specks, and from its tendency to weather rapidly, is an element of extreme importance in judging of the durability and future uniform appearance of many different stones. On exposure for a short time to the air it assumes a brown tint, whilst free sulphuric acid is given off, which attacks surrounding mineral matter, and the stone generally commences to break up. This may partially account for the decay of building stones situated far away from cities; in the centres of industry alone does free sulphuric acid exist in any quantity in the air. Being found, as marcasite frequently is, side by side with pyrites, the presence of either of them is not desirable in materials of construction, and the student will understand the force of this observation when it is stated that except under the microscope, in reflected light, it is extremely difficult to distinguish one from the other. The mineral may occur in such exceedingly minute specks that the test of hardness can only be applied with great caution, or not at all.

GENERAL BUILDING NEWS.

NEW BUILDINGS, ASPATRIA AGRICULTURAL COLLEGE, CUMBERLAND.—The Aspatria Agricultural College, Cumberland, which has been rebuilt and enlarged, was opened on the 21st ult. by the Mayor of Carlisle. The new building is a large quadrangular erection which faces the south. There is a central tower and two side wings, and the entrance-hall extends the whole width and length of the tower. On the north side of the building a corridor runs east and west, giving access to the two wings. In the western wing there are two large class-rooms and a reading-room, the master's rooms, chemical laboratory, bath-rooms, lavatory, &c. The first floor of the wing is taken up with the private rooms of the elder students, while above these are dormitories. In the east wing are located the reception rooms, the library, the dining-hall, which is capable of giving accommodation to from eighty to ninety students, the housekeeper's rooms, and the domestic offices. On the first floor are the private apartments of the principal, a billiard-room, and the bedrooms of the servants, &c. On a triangular piece of land across the road in front of the college are to be found a forestry and a botanical museum and garden, while the large agricultural museum belonging to the college is situated some few hundred yards away. The architect of the building was Mr. Scott, of Carlisle, and the work has been carried out by Mr. L. Ferguson, builder and plumber, Workington; Mr. W. Latimer, joiner, Carlisle; Mr. J. Walker, slater, Cockermouth; Mr. Gordon, painter, Maryport; Messrs. S. Ferguson & Son, plasterers, Carlisle; Messrs. Musgrave & Co., Belfast, heating apparatus; Mr. E. H. Shawland, hot-air grates; and Messrs. J. Stuart & Co., Lancaster, stained glass.

NEW ROMAN CATHOLIC CHURCH AND SCHOOLS, BOW COMMON, E.—The ceremony of laying the foundation-stone of these buildings was performed on the 26th ult. by the Cardinal Archbishop of Westminster. Both the church and schools have been designed by Mr. Fredk. A. Walters, of Great Queen-street, Westminster. The church will be in the thirteenth-century style of architecture, and will accommodate about 800 persons, and the schools are arranged for 500 children. Messrs. Gregory & Co., of Clapham Junction, are the contractors.

EXTENSIONS TO HOLY TRINITY CHURCH, GATESHEAD.—On the 27th ult. the foundation stone of the extensions to Holy Trinity Church, Gateshead, was laid by Mrs. Westcott. The scheme embraces the removal of the north wall and the construction of a nave and north aisle. The nave will be 72 ft. long, including chancel, and 22 ft. wide; the aisle 72 ft. long, including organ chamber, and 9 ft. 6 in. wide. The old church will remain as a south aisle, and the chancellor of the diocese has sanctioned its use as a side chapel, so that the present altar will not be removed, while the high altar will be at the east end of the new nave. A porch with vestries will be erected at the north-west portion of the building, and the new west gable will be set slightly back from the existing front in order to leave the latter intact. The new work is in harmony with the old, and has been designed by Mr. Stephen Piper, architect, Newcastle, and is being carried out by Messrs. Anderson & Slater, contractors, Newcastle, under the personal supervision of the architect. Mr. Richley is clerk of the work. The total cost of the alterations and additions, including the removal of the Ellison School, will be 4,900*l.*

CHURCH, SHALDON, DEVONSHIRE.—On the 21st ult. the Bishop of Exeter laid the foundation-stone of the new church which is to be erected at Shaldon. The building, which will be erected from plans prepared by Mr. Sedding, architect, of Plymouth, will accommodate 450 persons. The structure will be 100 ft. in length. The aisle walls will be erected completely of a dark red sandstone, with windows of Polyphant stone, the other dressings being of limestone.

ST. ANDREW'S CHURCH, AVONMOUTH, NEAR BRISTOL.—The new Church of St. Andrew, Avonmouth, was consecrated on the 27th ult. by the Bishop of the Diocese. The structure, consisting of chancel and south aisle, is carried westward to a temporary wall, leaving the west front to be added, together with other portions. Mr. Wood-Bethell, architect, furnished the design in accordance with which Messrs. R. Wilkins & Sons, of Bristol, have constructed the edifice, Mr. G. Downs being clerk of the works. A feature of the interior is the carving in the chancel, executed by Mr. William Smith, of Bristol. The iron-work, specially designed by the architect, is by Mr. J. A. Hunt, of Hoddesdon.

PROPOSED FAMILY HOME, GLASGOW.—The City Improvement Trust, Glasgow, decided on the 20th ult. to erect a Family Home on ground belonging to them in St. Andrew's-street. Plans for the building have been prepared by Mr. Macdonald, the City Engineer, and have provisionally received the sanction of the Council. The area of ground set apart for the home is situated on the north side of the street, between the Saltmarket and London-lane. It measures in all about 2,000 square yards. The building will be four stories in height, and may be described as T-shaped. It will contain 176 dormitories, each sufficient to accommodate two adults and one child, and there will be the usual provision for cooking, dining, and recreation purposes. There will also be a *crèche*, in which children residing in the home will be cared for in the absence of their parents. The dining-hall, kitchen, washing-house, stores, &c., are on the ground floor. The three upper floors are occupied by dormitories arranged upon either side of central corridors with through draught. There will be a recreation-room on the upper floor, and independent lavatory accommodation on each floor. The dormitories will each measure 12 ft. by 8 ft., and will have a cubic space of 1,000 ft.

NEW THEATRE, SHEFFIELD.—On the 28th ult. Sir Augustus Harris laid the foundation-stone of the City Theatre, Sheffield. The building will be capable of accommodating 2,500 people, and will possess pit, circle, and gallery, each section provided with coffee and smoke rooms. The circle holds 550 people, the pit 950, and the gallery 1,000, there being sitting accommodation for about two-thirds of these numbers. A fireproof curtain divides the proscenium from the auditorium, and extra exits and emergency doors for both audience, players, and stage men are provided. The designs are by Mr. Walter Emden, of London, and with him Mr. Edward Holmes, of Sheffield, has been associated as the local architect. Messrs. Starr & Cartwright are the quantity surveyors. Mr. Webster, Sheffield, is the contractor.

Baths and Washhouses, Islington.—The Islington Vestry at their meeting on the 21st ult. sanctioned the scheme of the Commissioners for Baths and Wash-houses for their new and largest set of baths and wash-houses, viz., that for the St. Peter's district. The plans have been prepared by Mr. A. Hessell Tiltman, their architect, for the two sets of establishments which were won by him in competition and which are now completed. Mr. Tiltman, we understand, was appointed architect in this case without competition some two months ago, and it is now intended to proceed with the work with all possible expedition.

Lunatic Asylum at Larbert, Stirling, N.B.—The new hospital for the treatment of acute lunacy, which has been erected by the Stirling District Asylum Board at Larbert, was opened on the 26th ult. According to the *Scotsman*, the building has been designed in the Elizabethan style, and the principal elevation of the hospital is towards the south. In length the building is close upon 300 ft., and the greatest breadth is 175 ft. The main features of the design are a central block and two side wings, with connecting corridors, for male and female patients. Each wing in turn is sub-divided into two other divisions—one for acute cases of insanity and one for feeble and sick cases. The main entrance to the hospital faces the north. In front of the entrance hall is the administrative department, containing medical office, surgery, matron's room, and waiting-rooms for visitors and patients, while on either side are the male and female wings. The kitchen, scullery, offices, and nurses' rooms also find a place in the administrative block, and the dining hall is situated exactly in the centre of the building. The kitchen and dining hall are connected. All the cooking is done by steam and gas, no coal being used. The dining-hall affords sitting accommodation for about 100 inmates. The principal dormitories and day-rooms face towards the south. With regard to the system of heating and ventilation, steam is conveyed by means of pipes from the boiler-room—a separate building about 100 yards distant—and distributed through a series of smaller pipes over the building. By means of gratings in the walls fresh air is admitted to the apartments after being heated by coming in contact with these pipes. In summer the gratings form an additional means of ventilation. The foul air in the rooms is carried off to the roof by means of a shaft. The dormitories and sleeping-rooms of the patients are provided with bath-rooms and lavatories in close proximity. In the dormitories special rooms are set apart for patients becoming dangerous during the night, and there are extra rooms for infirm patients. The walls and floors of the padded rooms are lined with indiarubber, padded with cocoa-nut fibre. Corridors for the use of the patients are provided at each end of the building, which open upon verandahs. In the event of infectious disease breaking out in the asylum, the wings may be isolated. Altogether accommodation is provided in the building for 120 patients, and the cost of the erection of the building has been about 20,000*l.* The work has been carried out under the superintendence of the architect, Mr. William Black, C.E., Falkirk, and Dr. Macpherson, medical superintendent. A number of additional alterations have been carried out on the main building, and a special administrative block has also been erected, the total cost of the whole of the improvements, including the hospital, amounting to about 40,000*l.*

Board Schools, Long Eaton, Derbyshire.—New schools have just been erected by the Long Eaton School Board, Derbyshire. The schools are built of red pressed bricks, with Darley Dale stone facings. They comprise fourteen class-rooms, five for the accommodation of 233 boys, five for 233 girls, and four for 240 infants. There are three cloak-rooms with lavatories, a cookery with two ovens and a gas-stove, and there are two private rooms for the head teachers. Each department is reached by separate corridors, at the termination of which is the central hall, 126 ft. long and 26 ft. wide by 26 ft. high. There are two revolving screens, forming a central hall, 42 ft. by 26 ft., for each department. The contract is 7,368*l.*, exclusive of the site. Mr. John Sheldon is the architect, and Messrs. Perks & Son are the contractors.

Wesleyan School, Leeds. — The foundation-stones of the "Charlie Coulson" Wesleyan Memorial School, Roseville-road, Leeds, were laid on the 29th ult. The new buildings will comprise a schoolroom, or mission-hall, capable of seating 420 persons, 63 ft. long and 34 ft. wide, with open-timber roof 27 ft. high in the centre. There will be a recessed platform at one end. The room will be lighted on one side by three-light windows. There will be separate entrances for boys and girls. Round three sides of this room separate class-rooms are arranged, including an infants'-room, with raised gallery. Upstairs a ladies' sewing-room is placed. Kitchen warming apparatus and other accessories are placed in the basement. The whole of the buildings will be heated by hot water. The interior woodwork is pitch-pine, and the buildings are being erected of brick, with stone dressings, in the Gothic style, from the designs and under the superintendence of Mr. G. F. Danby, architect, of Leeds, at a cost of 3,000*l.*

Enlargement of St. Paul's Church, Penzance.—On the 28th ult. was laid the corner-stone of an enlargement to St. Paul's Church, Penzance. The proposed enlargement consists of the erection of a new north aisle, and the consequent extension of the transept. The north wall will be carried about 25 ft. distant, thus providing additional accommodation for about 150. There will be two new entrances in Clarence-street, and also a back entrance. The font will be removed, the choir stalls lengthened, and the lectern removed so as to open up the chancel. The total cost is expected to be about 1,500*l.* The plans have been prepared by Mr. J. W. Trounson, F.R.I.B.A., of Penzance, and the contract has been taken by Mr. W. H. Stephens, of Penzance. The existing church is in the Early English style, and the new portion is to be in harmony with it, the work to be done in Castle-au-Dina stone with granite dressings.

Nave, St. Michael's Church, Brighton.—On the 26th ult. the foundation stone of a new nave for the church of SS. Michael and All Angels, Brighton, was laid by Lady Troubridge. Though complete in itself, the present church, which has been in existence about thirty years, and which has frontages to St. Michael's-place and Victoria-road, will become the south aisle of the extended church. The nave will be of the same length as the existing church, namely, 114 ft., and will extend from west to east, with an entrance from St. Michael's-place. The width will be 30 ft., and beyond, on the north, will be another aisle, 23 ft. wide. The existing church is 62 ft. high, but it is intended that the nave shall rise 36 ft. above it, to a height of close upon 100 ft. Externally the nave and new aisle will correspond in general appearance with the present church, which is of red brick, with Bath stone dressings. The church is being built by Messrs. Eastcourt & Sons, of Gloucester, from the designs of Messrs. Chappell & Co.

New Church, Cogan, near Penarth.—On the 27th ult., Lord and Lady Windsor laid the memorial-stone of the Church of Holy Nativity, Cogan. The new building is in the Perpendicular style, and will accommodate over 300 worshippers. It will consist of nave, transepts, chancel, south porch, heating-chamber, vestries, and organ chamber. The material used is local limestone, lined with Cattybrook brick in bands. The total cost of the church will be about 2,500*l.*, including the boundary walls. The architect is Mr. C. B. Fowler (Messrs. Kempson & Fowler, Cardiff), and the builder Mr. W. Richards, of Barry.

STAINED GLASS AND DECORATION.

Window, Truro Cathedral.—An addition has just been made to the series of stained glass windows in Truro Cathedral. One of the two lancet lights in the east wall of the north transept has been fitted with a memorial to the late Mr. Pole Carew, of Antony. The subject, which falls into the historical and ecclesiastical series planned for the whole building, includes in the light itself three illustrious saints of Cornwall. In the centre is St. Piran, the early evangelist of West Cornwall; on either side, slightly below him, are St. Germanus (in Episcopal vestments) and St. Petroc. The work has been carried out by Messrs. Clayton & Bell, of London.

Memorial Window, Christ's Church, Morningside, Edinburgh.—On the 30th ult., at Christ's Church, Morningside, Edinburgh, two stained-glass windows and a mural brass erected as a memorial of the late Rev. F. E. Belcombe were unveiled. The windows are situated in the south-west end of the nave, with the mural brass between them, and have been executed by Messrs. A. Ballantine & Gardner, of Edinburgh.

FOREIGN AND COLONIAL.

France.—The sculptor Mabille has completed the important work, entrusted to him by the Direction des Beaux-Arts, of restoring the statues which decorate the park at Versailles.——M. Antony Valabrègue has been directed, by the Ministry of Public Instruction and Fine Arts, to go and study the museums of the North and East of France, as well as those of Belgium and Germany.——The Minister of Public Works will shortly put in hand the works necessary for the prolongation of the submersible dam on the right bank of the Canche (Pas-de-Calais).——At Toucy (Yonne) there will shortly be inaugurated a monument to the memory of Pierre Larousse, the well-known encyclopædist.——A committee has been formed at Belley (Ain) for erecting a statue to Lamartine, in front of the college where he was a student.——Excavations recently made in Alsace-Lorraine have brought to light a Roman house, 40 mètres in length and about 8 mètres broad. On the site there have also been found rings, urns, pottery, and bones. The work of exploration is being actively prosecuted.——A subscription has been opened to raise funds for erecting in the little town of Remiremont (Vosges) a monument to the young soldiers of that arrondissement who fell during the War. —— On Sunday last the statue of Bayard at Mézières (Ardennes) was inaugurated; it is the work of the sculptor Croisy.——M. Cottereau, architect, has been instructed by the French Government to prepare a plan for a monument to be erected at an early date at Kustendjé, on the Black Sea, to the memory of those French soldiers who, dying during the Crimean War, were interred in the cemetery of that town.—— The town of Grenoble has organised a national exhibition of watch and clock-making; it comprises a very interesting section devoted to retrospective art.——A distinguished archæologist, M. Boucher de Molandon, has just died at Orleans, aged eighty-seven. He was the owner of the Château de Reuilly, where Joan of Arc slept, and whence she set out to raise the siege of Orleans. He especially occupied himself with the history of Joan of Arc, and his works, which are of the highest interest, brought him the cross of the Legion of Honour.——The death is also announced of M. Eugène Michel Guy, architect, of Gentilly (Seine), at the comparatively early age of forty-nine.——On Saturday next, August 12, there will be opened at Hâvre, in the garden of the Orangery adjoining the Hôtel de Ville, an International Exhibition of Hygiene, which will remain open for a month.——The exhibition of designs sent in in competition for the Prix de Rome (architecture) has been opened at the École des Beaux-Arts. The award will be made on Monday next, the 7th inst. The subject prescribed for the competitors was "a palace for the learned societies."——M. Leon Masson, engineer to the Conservatoire des Arts et Métiers, who is well known by his important works on the resistance of materials, has received the order of the Legion of Honour.——A monument erected in the Cathedral of St. Brieuc, to the memory of St. Guillaume, has just been inaugurated.

Berlin.—It has now apparently been decided that the old Prussian Royal Academy building is to make room for a new one. The present building has stood since 1745, having been erected by the architect Boumann after the destruction of an earlier building by fire in July, 1743. Its site is on the "Unter den Linden."——The annual election of the Divisional Chief for the various sections of the Royal Technical College has taken place. Professor Dobbert will have charge of the architectural division.——The whole of the sculpture in the Royal museums has been re-arranged. The improvements are greatly appreciated both by savants and artists, as care has been taken to place the exhibits chronologically and at the same time very artistically.——Elberfeld is to have a new Town Hall, and a competition for the design has been opened. 1,250*l.* will be given in prizes, 500*l.* being the value of the first premium. There will be seven assessors, among whom we notice Professor Ende, of Berlin, and Professor Thiersch, of Munich.——According to the *National Zeitung*, two tumuli have recently been opened at Bornhoeved, in Schleswig. In both cases stonework was here discovered under the outer earth. The smaller tumulus is rectangular in form, and contained bones, with various articles of personal adornment, from the nature of which it is concluded that it was the grave of a woman of the Bronze Age. The larger tumulus is square, and contained four separate graves. In this case bones, in wooden sarcophagi, were found, together with bronze swords, and bracelets fashioned in gold. In one of the graves the bones were covered with a woollen vestment, worked with gold thread.

Dresden.—During some repairs on the "Frauenkirche" a number of pieces of sculpture and wood-carving have been found. They apparently belonged to the monuments in the old Frauenkirche which was burnt down in 1727. Some of the finest alabaster sculpture found is dated between 1556 and 1562.—— The new dam at Einsiedel in Saxony is now approaching completion. A reservoir is being formed to supply the town of Chemnitz, which is about seven miles distant, with water by the submerging of three valleys. The superficial area of the reservoir will be about ten acres, and its maximum contents 72,000,000 gallons. No less than 770,000 cubic ft. of masonry have been employed in the construction of the dam, which is nearly 200 yds. long and 60 ft. high. At the foundations, which are 30 ft. below ground level, the thickness of the masonry is 70 ft.; at the crown it measures 12 ft.

Switzerland.—Lucerne is to have a new central railway station. An "international" competition has been opened for the design. The sending-in day is November 15. Particulars are obtainable, free of charge, from the Chief Engineer to the "Zentralbahn," No. 36, Leonhardsgraben, Basel.—— According to the *N. Zuricher Zeitung*, another lake dwelling has been recently discovered by Dr. J. Früh on the western shore of the Greifensee (about ten miles east of Zurich). The remains of eight huts have been found, occupying in all a space of 105 by 12 mètres. The piles are mostly of oak, and of small diameter. The dwellings are considered to date from the end of the Stone Age.

Brussels.—A competition has been recently held for the design for an artistic poster for the Belgian Ostend-Dover passenger boats. Eighty designs were sent in by sixty-three candidates, the first premium (40*l.*) falling to M. Henri Cassiers.

MISCELLANEOUS.

THE WORTHING WATER-SUPPLY.—The inquiry into the question of a new water-supply for Worthing, which the Local Government Board has specially expedited in view of the recent outbreak of typhoid, was held by Mr. Arnold Taylor, in the Council Chamber, Worthing, on the 1st inst. The nominal loan asked for was 3,000*l.*, one-third representing the cost of the proposed site, and the remaining two-thirds to enable the Corporation to make an immediate start with the works. The complete outlay will extend to many thousands of pounds, but it is at present impossible to prepare an accurate estimate. Mr. Corrie Grant appeared for the Corporation, and stated that though the cause of the outbreak was not yet absolutely determined, the Council had decided to deal most rigidly with the public water-supply and make it perfectly free from suspicion. Evidence was given by Dr. Kelly, Medical Officer of Health (who recommended that the existing works should be closed and an entirely new supply of water obtained), and by Mr. Mansergh, civil engineer, and Mr. Lucas, the well-known geologist, both of whom affirmed the desirability of the site selected at the foot of the Downs. Mr. Gainsford, an extensive owner of land in the neighbourhood, objected to the site, on the ground that he has twenty-three wells in the line of the proposed works, and that his supply is likely to be intercepted thereby. A meeting of the Town Council was held on the same day, at which it was resolved to purchase the works of the West Worthing Water Company, which embraces the West Ward of Worthing in its area of supply.

THE SWEDISH TAR TRADE.—A Swedish contemporary draws attention to the circumstance that barrels of Swedish tar are becoming more and more underweighted. This is a serious matter to builders and importers. Formerly the whole barrels had to contain forty-eight Swedish kannas of tar, and the half barrels twenty-four kannas, before they were branded with the Government brand (crown) as being full weight; but since the introduction of the metric system branding by the Government has been abolished, and consequently the size and contents of the barrels, which are sold at so much a piece, are steadily decreasing. In Finland on the other hand, every barrel of tar has to be branded with its contents before sale is allowed.

BELLS, WORTLEY CHURCH, NEAR SHEFFIELD.—A new set of bells having been presented to the above Church by the Marchioness of Drogheda, advantage has been taken of the opportunity to provide a new clock with Cambridge chimes. The clock shows the time upon two large external dials, which are painted with a white ground, the hands, figures and minutes being painted black. The clock is fixed on strong iron brackets, is provided with Lord Grimthorpe's double three-legged gravity escapement and compensation pendulum, and strikes the hours and Cambridge chimes upon the new bells. The whole of the clock-work has been made and fixed by Messrs. Wm. Potts & Sons, of Guildford-st., Leeds.

PUBLIC IMPROVEMENTS, CARLISLE.—On the 18th ult. Major-General H. D. Crozier, R.E., Local Government Board Inspector, held an inquiry in the Committee Room of the Town Hall, Carlisle, with respect to the application of the Town Council for sanction to borrow 16,000*l.* for the purpose of opening out and improving Lowther-street. The Town Clerk, Mr. Collingwood, explained how the amount which the Corporation wished to borrow was made up. The City Surveyor, Mr. W. Howard Smith, stated that of the 13,595 yards which had been purchased the actual street would take 4,200 square yards. The property between the proposed new street and Rickergate, he explained, was some of the oldest in the city, and it was hoped that the owners of it would acquire the surplus with a view of improving the neighbourhood.—The Inspector afterwards held an inquiry with reference to an application for sanction to borrow 8,000*l.* for gas works purposes. This concluded the inquiry, and the Inspector afterwards visited the gasworks and inspected the Lowther-street property.

CREDENCE TABLE, ST. MICHAEL'S CHURCH, CADBURY, DEVONSHIRE.—In the sanctuary of St. Michael's Church, Cadbury, there has just been placed a marble credence table. It is fixed on the north side, close to the marble reredos, to which additions were made some few years ago from designs prepared by Mr. R. Medley Fulford, F.R.I.B.A., architect, Exeter. The credence table itself is of warm-coloured and polished Devonshire marble, and is supported on the wings and shoulders of an angel, sculptured in white Castellini marble. The figure is represented with hands in the attitude of prayer, and with extended wings. The credence, like the reredos, is the work of Messrs. Harry Hems & Sons, of Exeter.

PROPOSED PUBLIC IMPROVEMENTS IN WOLVERHAMPTON.—The Town Council of the Borough of Wolverhampton having applied to the Local Government Board for sanction to borrow 45,918*l.* for purposes of sewerage and sewage disposal, 14,000*l.* for works of paving, and 1,927*l.* for purposes of electric lighting, Mr. Samuel Joseph Smith, Local Government Board Inspector, attended at the Council Chamber of the Town Hall on the 25th ult., to inquire into the subject-matter of the applications. At the close of the inquiry the Inspector visited some of the places where the improvements are to be made.

MEETINGS.

FRIDAY, AUGUST 4.

British Archæological Association.—Annual Congress, Winchester (continued).

SATURDAY, AUGUST 5.

British Archæological Association.—Annual Congress, Winchester (continued).

MONDAY, AUGUST 7.

Liverpool Engineering Society.—Excursion to the Dore and Chinley Railway (Midland Railway, Derbyshire), by permission of the engineers, Messrs. J. Somes Story and E. Parry.

FRIDAY, AUGUST 11.

Junior Engineering Society.—Summer Excursion (Wilts, Devon, and Cornwall).

SATURDAY, AUGUST 12.

Glasgow Architectural Association.—Visit to Dunblane Cathedral, Doune Castle, Stirling, &c.

Junior Engineering Society.—Summer Excursion (continued).

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

13,244.—FLUSHING DRAINS: *E. Turner.*—This invention relates to self-flushing house or sewer drains, in which the base or container of same is made of cast-iron, earthenware, or other material, and the outlet or discharge-pipe is placed at right-angles to the same, having its sharp edges squared or rounded off. A self-flushing box-trap is connected to the hinged end of the grid of the drain. This trap has two arms so arranged that the water is on a level with the top of the box, instead of on a level with the bottom of the outlet or discharge-pipe, as is usual. When the drain requires flushing, this is instantaneously and perfectly secured by simply raising the grid, and the apparatus forms a perfect seal against the passage of noxious gases and bad smells.

15,299.—ELECTRIC DOOR FASTENINGS: *J. Goriup.*—This invention has reference to electric apparatus for operating one or more levers or bars, by which the unfastening or fastening of doors, or both these operations, may be accomplished from any suitable point inside or outside a room. The construction of the apparatus varies. For the purpose of opening a door closed by a spring catch, this latter is connected to a lever, one arm of which comes opposite to an electro-magnet. The door is unfastened by pressing down a clamping key, which closes an electric circuit, magnetises the iron core of the electro-magnet, and attracts to the latter one arm of the lever in such sort that the other arm draws back the spring catch. In another form of construction the two-arm angular lever, which acts upon the catch, is replaced by a four-arm lever mounted to turn on a central pivot vertically, which is also actuated by an electro-magnet and battery. There is still another form of the apparatus where, instead of the four-arm lever just spoken of, a two-arm lever is rotated by means of a stud projecting from the back of a revolving spring casing. The apparatus may be provided with a bell, operated by the arms of the revolving lever, so as to give signals.

15,498.—LATCHING MECHANISM OF LOCKS, &c.: *J. Legge.*—This invention is primarily designed to enable a hanging or pivotted latch-head to be used in the same case with a locking bolt, and the latch spindle to be so arranged that a less deep case would be available. The latching mechanism consists of a latching head, having a short upward shank, of which the upper end is pivotted within and near the hinder end of the case and beneath the locking bolt, and is actuated by a double-horned follower or the latch spindle. The locking mechanism may be of the usual or any convenient description.

17,586.—MACHINERY FOR PRESSING BRICKS, TILES, &c.: *J. Hamblett.*—This invention consists of improvements in the pressing machinery described in Specification No. 2,636 (June 30, 1879). The present modification of that apparatus is by the adaptation to the pressing machine of a spring brake, in place of the weighted sliding brake described in the former specification. The new brake consists of four uprights fixed to the cross head of the press, and furnished with accessory parts, which form a brake acting as follows:—As soon as the screw of the pressing machinery has risen nearly to therequired height, the friction disc, giving the rotary motion to the driving wheel in the direction proper to raise the screw, is withdrawn from the said wheel, and the screw is brought to rest and held in its raised position.

22,036.—WATER-CLOSETS: *W. J. Freeman and E. Freeman.*—In pedestal closets of the type known as "wash down," this invention proposes to form the closet-pan of one piece of glazed earthenware, and the pedestal and trap in another piece, either of glazed earthenware also or other suitable material. This will ensure cheapness of production, and in case of breakage only one portion would be required to be replaced. The pieces would be suitably formed to suit the system.

9,190.—WINDOWS: *A. Weiss.*—The purpose of this invention is to provide improved devices to be used for the adjustments of opening a window of that class in which the window-sash is hinged to the frame; these devices, consisting of two members (one a pivotted rod, and the other a disc, provided with holes or recesses to gear with a rack on the rod), the one attached to the frame, the other to the sash, adapted to engage in different positions the one with the other.

9,629.—FIREPROOF FLOORS: *J. T. Chappell.*—This invention relates to the better and more perfect construction of fireproof lintels of brick or other incombustible materials, such as are placed in the spaces between iron girders, to support concrete. The tubular lintels of this invention are to be connected with the girders by "notching" in the usual manner. These lintels are formed with an outward bulge at each side, so that when the concrete is filled in between them it has to assume a dovetail form between each pair, and thus the floor is thoroughly keyed together.

NEW APPLICATIONS FOR LETTERS PATENT.

JULY 17.—13,802, C. Korte, Flushing Tanks for Closets and Cisterns.—13,804, C. Cuncliffe, Nails.—13,826, J. Kemsley and J. T. Whittle, Water-closets and manner of Discharging, Flushing, and Ventilating same.—13,828, F. Cobb and A. Oldham, Sash-fasteners.—13,844, W. Hassall, Furnaces for Pottery and other Kilns.

JULY 18.—13,896, J. West, Device for Clearing the Waste Pipes of Sinks, Lavatories, and Baths.—13,903, E. and A. T. Box, Self-acting Ball Trap for House and Sewer Drains and Closets.—13,936, J. Shannon, Wood-graining Machines.

JULY 19.—13,958, F. W. Baker, Window Fastenings.—13,962, F. C. Lynde, Connecting Bends of Drain and other Pipes.—13,964, F. C. Lynde, Intercepting Grids for Gully and other Traps.—13,965, F. C. Lynde, Siphon and other Traps.—14,004, J. Budd, Brushes for Distempering Walls, Ceilings, &c.

JULY 20.—14,025, J. A. Towle, and W. G. Stones, Automatic Window Sash-lifter and Adjuster.—14,043, E. Smith, Chimney Cowls.—14,077, E. Sprenger, Door-latch or Fastener.—14,081, E. Bannister, Foot Paving.

JULY 21.—14,126, J. Davies, Manufacture of Bricks.

JULY 22.—14,177, W. Longmore, Water Gutters or Spouts.—14,185, J. Williamson, Window-sashes and Frames.—14,186, H. S. Gledhill, Saws for Cutting or Sawing Stone.—14,192, W. Cooper, Ventilators.—14,193, P. W. Barker, Window-sashes.—14,204, J. Jones and S. H. Rowley, Water-closets.

PROVISIONAL SPECIFICATIONS ACCEPTED.

9,101, R. Anderson, Self-acting Waste-water Flushing Chamber.—9,364, H. Winks, Compound Metal and India-rubber Pipe to prevent Bursting from Frost.—10,913, F. Ashwell and D. Nesbit, Heating and Ventilating.—11,397, F. Clarkson and others, Automatic Disinfecting Apparatus for Sewers, Drains, Water-closets, Urinals, &c.—12,154, R. Knights, Bent Plates used for Bridges, Floors, &c.—12,494, H. Chubb, Waste-preventing and Flushing Cisterns for Water-closets, &c.—12,540, J. Naylor, Lead Traps.—12,639, E. Green, Channel Blocks and Reducing Couplings for Manholes and Inspection Chambers in connection with Pipe Sewers and Drains, &c.—12,773, J. Wallace, Hanging Cupboard or Wardrobe.—13,042, H. Jones, Gauge for Woodworkers.—13,173, B. and W. Cannon, Wood Stains.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

13,245, E. Turner, House or Sewer Drains.—14,218, W. Dick, Gas Pipes.—16,415, M. Turpin, Parquet Floors and Wall Linings.—16,848, J. Rostron and J. Hilton, Imitation Tiles suitable for Hearths, Grates, &c.—17,046, C. Manchip and R. Foley, Roofing Tiles.—20,847, J. Knight, Radiator for Warming Buildings and Utilized Heat Wasted in Chimnies.—2,626, M. Becker, Process for Producing a Fundamental Mass from which Varnish and Similar Coatings may be made.—2,650, C. Porter, jun., Slide Hinge.—7,306, G. Body, Sash Frames and Pivotted Sliding Sashes.—10,407, A. James, Hanging Window Sashes, &c.—11,882, A. Boult, Builder's Level.—11,883, R. Gassner, Closet Pans.—12,320, A. Boult, Extensible Shutters, Doors, &c.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

JULY 11.—By *Wilkinson, Son, & Welch* (at Brighton): "The Hall," Southwick, and five cottages, f., 1,150*l.*

JULY 20.—By *Messrs. Cobb* (at Maidstone): F. houses, cottages, and a plot of land, Lenham, Kent, 1,560*l.*—By *Wilkinson, Son, & Welch* (at Brighton): 40, 42, Clarendon Villas, Hove, f., r. 100*l.*, 1,530*l.*

JULY 24.—By *P. Hodson:* 108, 110, Queen's-rd., Finsbury-pk., u.t. 83 yrs., g.r. 25*l.* 4s., r. 130*l.*, 1,425*l.*; 135, Isledon-rd., u.t. 66 yrs., g.r. 7*l.* 15s., 305*l.*—By *R. Tidey & Son:* F.g.r. of 15*l.*, St. Jude-st., Mildmay-pk., reversion in 39 yrs., 450*l.*—By *J. H. Bethell:* 32 to 38, Havelock-rd., Hackney, u.t. 62 yrs., g.r. 21*l.*, 950*l.*—By *D. J. Chattell:* F.g.r. of 24*l.*, Newton-rd., Wimbledom, reversion in 87 yrs., 540*l.*—By *Rumball & Edwards:* "Bottom House Farm," Redbourn, Herts, containing 71 a. 1 r. 32 p., 1,750*l.*; "Baker's Farm," 49 a. 2 r. 20 p., f., 1,200*l.*; an enclosure of land, 18 a. 1 r. 3 p., with "The Manor of East Brook Hay," 290*l.*; "Agnell's Farm," 81 a. 3 r. 1 p., f. and c., 1,500*l.*; "The Manor of Agnell's," 105*l.*; four f. cottages, and straw hat factory, r. 66*l.* 5s., 700*l.*; f. stabling and outbuildings in Fish-st., 125*l.*; enclosures of land, 212 a. 2 r. 12 p., 3,612*l.*

JULY 25.—By *Mullett, Booker, & Co.*: 88, Gloucester-ter., Hyde-pk., u.t. 49 yrs., g.r. 21*l.*, r. 175*l.*, 1,995*l.*—By *Bean, Burnett, & Co.*: 77, Umfreville-rd., Finsbury-pk., u.t. 96 yrs., g.r. 7*l.*, 255*l.*—By *Furber, Price, & Furber:* 168 to 184 (even), Hill-st., Walworth, f., 1,760*l.*—By *A. Blackford:* "Walm House," with grounds, Willesden Green, f., 1,825*l.*—By *Debenham, Tewson, & Co.:* 8, Loveridge Mews, Brondesbury, u.t. 82 yrs., g.r. 4*l.* 4s., 200*l.*—By *Alder & Co.:* 1 to 4, Albert-ter., Teddington, f., 745*l.*—By *Towers, Ellis, & Co.:* 12, 22, 24, Church-st., Marylebone, u.t. 28 yrs., g.r. 30*l.* 10s., 1,195*l.*; 22, 26, Exeter-st., u.t. 38 yrs., g.r. 14*l.* 4s., 400*l.*; 34, Earl-st., u.t. 22 yrs., g.r. 10*l.* 10s., r. 30*l.*, 185*l.*; 90, North-st., u.t. 30 yrs., g.r. 6*l.* 14s., 335*l.*—By *F. Millar:* 106, Rectory-rd., Stoke Newington, and 17, Fountayne-rd., including mortgage, 750*l.*—By *Cooper & Goulding:* 200, Brecknock-rd., Tufnell-pk., u.t. 76 yrs., g.r. 8*l.* 8s., 500*l.*; 382, 384, 386, York-rd., Wandsworth, u.t. 85 yrs., g.r. 15*l.* 5s. 3d., r. 118*l.*, 950*l.*; 388, York-rd., u.t. 83 yrs., g.r. 13*l.* 4s., r. 55*l.*, 550*l.*—By *Charles & Tubbs:* 41, 45, 49, 57, Acton-st., King's Cross, u.t. 48 yrs., g.r. 84*l.*, r. 122*l.*, 840*l.*

JULY 26.—By *A. Prevost & Son:* 28, Bancroft-rd., Mile End, u.t. 64 yrs., g.r. 5*l.* 5s., 510*l.*; 20, 22, Nottingham-st., Bethnal Green, u.t. 25 yrs., g.r. 10*l.* 10s., 125*l.*; 2, 4, John's Hill, St. George's-in-East, f., 285*l.*; 12, 13, 14, Chopping's-ct., f., 250*l.*; 61A, Great Hermitage-st., Wapping, f., r. 30*l.*, 300*l.*; "Glyn Villa," Ferndale-rd., Leytonstone, f., r. 35*l.*, 435*l.*; a plot of f. land, Montague-rd., 100*l.*—By *C. P. Whiteley:* 7, 8, Boxworth Grove, Barnsbury, u.t. 48 yrs., g.r. 16*l.*, 640*l.*—By *R. A, Enright:* 47, Yerbury-rd., Holloway, u.t. 75 yrs., g.r. 7*l.* 10s., 165*l.*; 6, Kintore-st., Bermondsey, u.t. 28 yrs., g.r. 3*l.*, 155*l.*; 6, Brodie-rd., Stoke Newington, u.t. 80 yrs., g.r. 6*l.*, 255*l.*—By *D. Young:* 58, Jeffreys-rd., Clapham, f., r. 55*l.*, 750*l.*—By *J. E. Pinder:* 32, Canterbury-rd., Ball's Pond, u.t. 58 yrs., g.r. 3*l.* 15s., r. 24*l.*, 265*l.*;

CONTRACTS, AND PUBLIC APPOINTMENTS.

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
*Road Making and Paving Works	Willesden Loc. Bd.	O. Claude Robson	Aug. 8
Widening, &c. Church-road, Lisvane	Llandaff Highway Bd.	J. Holden	do.
Whinstone Road Metal, Blyth	Cowpen Local Board	T. Maddison	do.
Entrance Lodge, Hipperholme, Halifax	.....	Raymond Berry	do.
Asphalting and Paving, near Wakefield	East Ardsley Sch. Bd.	*Official*	do.
Cottage, Pitlake	Croydon Town Council	do.	Aug. 9
Sewerage (1,392 yards), Rochdale	Wuerdle and Wardle Local Board	J. T. Wood	do.
Levelling, Metalling, &c. Lucas and Fairfax-roads	Colchester Corp.	H. Goodyear	do
Three Blocks Semi-detached Cottages, Granary, &c.	Colchester Town Coun.	do.	do.
Public Offices, &c. Central-street	Ramsbottom (Lancs.) Local Board	A. W. Smith	do.
Electric Lighting	Derby Public Library Committee	Bramwell & Harris	do
*Construction of Roads, Drainage, &c.	Grimsby U.S.A.	M. Petree	do.
*Drainage Improvements, &c.	do.	.....	do.
Additions, &c. to Schools, Whiston, Staffs	.....	R. Scrivener & Sons	do.
Greenhouses, &c. Lister and Bradford Moor Parks	Bradford (Yorks) Corp.	J. H. Cox	Aug. 10
Pipe Sewer, Lincoln-street	Wakefield U.R.S.A.	F. Massie	do.
Police Station, Torrance of Campsie, Stirling, N.B.	.....	J. M'Hardy Young	do.
Enlarging Boys' Home at Whiston	Prescot Union	Jas. Gandy	do.
*Public Offices	Shepton Mallet L. B.	G. J. & F. W. Skipper	do.
Alterations, &c. to Memorial Schools, Marsh, Huddersfield	.....	John Kirk & Sons	do.
*Various Works	M. R. Co.	*Official*	do.
Drainage Works	York Union	do.	do.
*Strengthening Foot Bridge at Mucking Light House	.....	do.	do.
*Post Office, Burnley	Trinity House Corp.	do.	Aug. 11
Water Supply at Workhouse	Com. of H.M. Works	Cannock (Staffs.) Union	do.
Forty-nine Labourers' Cottages	Carrick-on-Suir (Ireland) Union	J. R. Veall & Son	do.
*Waterworks	Swansea U.R.S.A.	J. Mullins	Aug. 12
New Road and Bridge, Llanllechid, Wales	Bethesda Impt. Com.	Jno. Thomas	do.
Burial Ground Works	Grasmere (Westmoreland) Local Board	*Official*	Aug. 13
*Additions to Schools, &c.	Whitstable, &c. School Board	do.	Aug. 14
Forming and Paving, Clara-street, &c.	Warrington Corp.	do.	do.
Sewerage Works, Larbert, N.B.	Stirling County Coun.	T. Longdin	do.
School Buildings, Coseley, near Bilston	Sedgley School Board	Warren & Stuart	do.
Additions to Infirmary at Workhouse, Sheffield	.....	A. P. Brevitt	do.
Five Houses and Shops, St. Dunstan's, Canterbury	Ecclesall Bierlow Union	T. G. Edwards	do.
	.....	A. R. Pite & Son	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Sixty-seven Houses, Wattstown, Rhondda, S. Wales	Cottage Club	J. Morgan	Aug. 11
Street-making, Scunthorpe, Lincs.	R. J. H. Parkinson	.....	do.
Electric Lighting Works, Yorks	Technical Instruction Committee	A. Creer	Aug. 12
Hospital	Aberdeen Town Coun.	J. Rust	do.
Sewerage Works, Stockton Heath	Runcorn R.S.A.	P. Silcock	do.
*Post Office, Maidenhead	Com. of H.M. Works	*Official*	do.
Additions, &c. to Farm Buildings, Wadsley Asylum	West Riding C.C.	J. Vickers Edwards	Aug. 18
Additions, &c. to House, Wellington-square	Hastings Union	*Official*	Aug. 21
Isolation Hospital, Moulsford Asylum, Berks	Committee of Visitors	G. T. Hine	do.
Houses and Shops, Meadow-street, Weston-super-Mare	.....	Price & Wooler	Aug. 19
*Alterations, &c. Duke-street, Chelmsford	Essex County Council	*Official*	Aug. 19
Precipitating Tanks, House, &c.	Evesham Town Council	R. C. Mawson	Aug. 19
*Pipes, &c. for Main Sewers	Canterbury U.S.A.	Frank Baker	Aug. 20
*Pier Extension	Bournemouth Corp.	F. E. Robinson	Aug. 21
Shop, House, &c. Manningham-lane, Bradford, Yorks	....	C. H. Hargreaves	No date
Kerbing, Channelling, &c. Duke of York-street, Wakefield	Lord Grantley	W. Watson	do.
Three Houses, Stella Staith, nr, Newcastle-on-Tyne	Jno. Heath	D. P. Rodgers	do.
Cast-Iron Pipes	Hull Corporation	B. J. E. Bruce	do.
Sixteen Houses, Garforth, Leeds	.....	Mr. Squires	do.
Warehouse, Sunbridge-road, Bradford, Yorks	.....	J. Jackson	do.
School Buildings, Caldewgate	Carlisle School Board	T. Taylor Scott	do.
*Completion of Four Houses, Chelsea	.....	A. J. Best	do.
*Re-building Portion of Rectory, nr. Ludlow	Rev. A. Bannister	.....	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Clerk of Works	Grimsby U.S.A.	3*l.* 3*s.*	Aug. 8
*Borough Surveyor's Assistant	Eastbourne Corp.	150*l.*	Aug. 10
*Surveyor of Roads, Bridges, &c.	Surrey County Council	800*l.*	No date
*Clerk of Works	Barking Town L.B.	3*l.* 3*s.*	do.

Those marked with an Asterisk (*) are advertised in this number. Contracts pp. iv., vi., viii., *and* xxiii. *Public Appointments, pp.* xx. *and* xxiii.

412, 414, 416, High-rd., Tottenham, f., 750*l.*; 1, Queen's-rd., Edmonton, f., r. 18*l.*, 290*l.*; a plot of f. land, Greenlanes, 95*l.*—By *T. Wright:* The f. residence, "Oakhurst," Shortlands, Kent, r. 60*l.*, 950*l.*

JULY 27.—By *D. Watney & Sons:* 90, 92, High-st., Kensington, f., area 870 ft., 6,150*l.*—By *A. Watson:* 13, 14, Gloucester-rd., Kew, u.t. 65 yrs., g.r. 6*l.*, r. 55*l.*, 380*l.*; 10, 12, Fordwych-rd., Hampstead, u.t. 86 yrs., g.r. 6*l.*, 1,225*l.*; 21, 23, 41, 43, Fordwych-rd., u.t. 87 yrs., g.r. 24*l.*, 1,810*l.*—By *C. C. and T. Moore*, 57, Duckett-st., Mile End, f., 165*l.*; 21, Alderney-rd., u.t. 56 yrs., g.r. 4*l.* 5*s.*, r. 36*l.*, 370*l.*; 42, Lichfield-rd., u.t. 50 yrs., g.r. 3*l.* 10*s.*, 315*l.*; 22, 23, Fairfield-rd., Bow, u.t. 36 yrs., g.r. 6*l.* 8*s.*, r. 52*l.*, 360*l.*—By *W. Bradly:* 1 to 6, Crayford-ter., Crayford, u.t. 70 yrs., g.r. 9*l.*, 940*l.*; 86, 88, and 90, Lee-rd., Lee, u.t. 64 yrs., g.r. 42*l.*, r. 215*l.*, 1,500*l.*—By *F. J. Bisley & Sons:* 20, Millgrove-st., Battersea, u.t. 62 yrs., g.r. 4*l.*, 145*l.*—By *Norton, Trist, & Gilbert:* 7, Crosby-sq., Bishopsgate, f., area 1,450 ft., 7,500*l.*—By *Stimson & Sons:* No. 298, Leytonstone-rd., f., r. 45*l.*, 710*l.*; 43, Thorne-st., Wandsworth-rd., u.t. 39 yrs., g.r. 6*l.*, 250*l.*; 82, Carlisle-st., Edgware-rd., u.t. 43 yrs., g.r. 6*l.*, r. 55*l.*, 350*l.*; 120, Manor-st., Clapham, u.t. 6 yrs., g.r. 5*l.* 2*s.*, r. 28*l.*; also a l.g.r. of 2*l.*, same term, 45*l.*; 28, 30, Sultan-st., Camberwell, u.t. 72 yrs., g.r. 9*l.*, 145*l.*; 22, 23, Pitt-st., Commercial-rd., u.t. 10 yrs., g.r. 6*l.* 6*s.*, 100*l.*—By *Newbon & Co.*: No. 281, City-rd., u.t. 42 yrs., g.r. 15*l.*, r. 80*l.*, 545*l.*; 239, Albion-rd., Stoke Newington, u.t. 90 yrs., g.r. 7*l.*, 390*l.*—By *Oughton & Son:* 70, Westbourne-st., Pimlico, u.t. 28 yrs., g.r. 5*l.*, 360*l.*; 6, Caroline-st., u.t. 28 yrs., g.r. 5*l.*, r. 60*l.*, 670*l.*; 10, Randall-st., Battersea, u.t. 42 yrs., g.r. 4*l.*, r. 28*l.* 10*s.*, 200*l.*; a plot of f. land, Bective-rd., Putney, 320*l.*—By *G. B. Hilliard & Son:* "Stanford House," Stanford Rivers, Essex, and three cottages, f., 560*l.*; two f. houses and enclosures of land, 2 a. 2 r. 12 p., 342*l.*—By *Foster & Cranfield:* 144, Mayes-rd., Wood Green, u.t. 73 yrs., g.r. 7*l.*, 300*l.*; l.g.r. of 33*l.* 6*s.*, St. Anne's-rd., Brixton, u.t. 6 yrs., 135*l.*; 1, 3, 5, and 7, Longnor-rd., Mile End, u.t. 71 yrs., g.r. 16*l.*, 825*l.*; 8, Alderney-rd., u.t. 56 yrs., g.r. 4*l.*, r. 30*l.*, 335*l.*; 48, Lichfield-rd., Bow, u.t. 49 yrs., g.r. 3*l.* 10*s.*, r. 28*l.*, 260*l.*; 98, Victoria-pk.-rd., Victoria-pk., u.t. 49 yrs., g.r. 6*l.*, r. 40*l.*, 300*l.*—By *Worsfold & Hayward* (at Dover): 271, 272, London-rd., Dover, 580*l.*; 14, Liverpool-st., u.t. 29 yrs., g.r. 1*l.* 5*s.*, 300*l.*; two f. cottages, George-st., Buckland, 270*l.*

JULY 28.—By *E. & F. Swain:* 18, Hanover-ter., Notting Hill, f., 1,020*l.*; 16, Ladbroke-rd., u.t. 42 yrs., g.r. 10*l.*, 385*l.*—By *Rushworth & Stevens:* 21, High-st., Barnes, f., r. 35*l.*, 415*l.*; 50, Great Ormond-yd., Bloomsbury, f., r. 21*l.*, 505*l.*; 26, South Molton-st., Oxford-st., and 76A, Davies-st., f., r. 136*l.*, 2,550*l.*—By *W. W. Jenkinson:* 38, 40, 42, East Hill, Wandsworth, u.t. 83 yrs., g.r. 24*l.*, r. 102*l.*, 860*l.*; 116 to 126 (even), Myddleton-rd., Hornsey, u.t. 74 yrs., g.r. 44*l.* 2*s.*, 420*l.*; 177, 179, Fairbridge-rd., u.t. 74 yrs., g.r. 12*l.*, 275*l.*; 3, Rosemary-ter., Mortlake, u.t. 68 yrs., g.r. 5*l.*, r. 20*l.*, 125*l.*—By *Merritt & Mould:* 40, Cambridge-rd., Walthamstow, f., 135*l.*; No. 490, Old Ford-rd., f., 365*l.*; 120 to 126 (even), Armagh-road, Bow, u.t. 70 yrs., g.r. 10*l.*, 890*l.*; 128, 130, 132, Armagh-rd., u.t. 70 yrs., g.r. 9*l.*, 675*l.*—By *Ventom, Bull, & Cooper:* 1 to 9, Page's-ter., Greenwich, 1 to 14, Page's-av., f., 3,000*l.*; 47 to 53 (odd), Trinity-rd., Penge, 97, 99, Crampton-rd., u.t. 75 yrs., g.r. 26*l.*, r. 170*l.*, 850*l.*—By *W. Levens:* 6, Dartmouth-ter., Forest Hill, u.t. 67 yrs., g.r. 5*l.*, r. 70*l.*, 920*l.*; "The Railway Signal Hotel," f., r. 100*l.*, 3,400*l.*—By *Geo. Gouldsmith, Son, & Co.:* F.g.r. of 39*l.*, Paul-st., Finsbury, reversion in 27 yrs., 1,200*l.*; F.g.r. of 61*l.* 10*s.*, Phillipp-st., Kingsland, reversion in 13 yrs., 1,530*l.*—By *Reynolds & Eason:* F.g.r. of 169*l.* 6*s.*, Artillery-lane, City, reversion in 42 yrs., 4,420*l.*; f.g.r. of 57*l.* 10*s.*, reversion in 21 yrs., 1,820*l.*; 25 to 29, Artillery-lane, f., r. 306*l.*, 4,960*l.*—*R. Reid:* 41, Albemarle-st., Piccadilly, f., r. 450*l.*, 9,000*l.*; No. 188, Regent-st., and 58, King-st., u.t. 26 yrs., g.r. 203*l.* 5*s.*, 5,050*l.*; 6, Carlisle-st., Soho, f., 1,200*l.*; two enclosures of f. land, Squires Land, Finchley, 12 a. 1 r. 34 p., 2,200*l.*—By *Baker & Sons:* f. site, Victoria-st., Westminster, area 3,600 ft., 6,950*l.*; the residence "Ivy Bank," Haverstock Hill, and 3 a. 2 r. 18 p., u.t. 74 yrs., g.r. 41*l.*, 8,600*l.*; l.g.r. of 65*l.*, Ornan-rd., u.t. 74 yrs., no g.r., 1,475*l.*; 8, Fortune-gate-rd., Harlesden, u.t. 97 yrs., g.r. 6*l.*, r. 29*l.*, 320*l.*; 45, Hawkstone-rd., Rotherhithe, u.t. 57 yrs., g.r. 3*l.* 1*s.*, 215*l.*

[*Contractions used in these Lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G. ton	9/0/0	0/0/0
Teak, E.I. ..load	9/0/0	15/0/0
Sequoia, U.S.ft.cu.	2/3	2/6
Ash, Canada load	3/15/0	4/0/0
Birch, do.	2/15/0	3/5/0
Elm, do.	3/10/0	4/15/0
Fir, Dantsic, &c.	1/5/0	2/15/0
Oak, do.	3/0/0	5/5/0
Canada	5/10/0	7/0/0
Pine, Canada red	2/5/0	2/15/0
Do. Yellow	2/5/0	4/10/0
Lath, Rintsic, fath	4/10/0	5/10/0
St. Petersburg	5/0/0	6/10/0
Wainscot, Riga, &c., log	3/0/0	3/10/0
Odessa, crown	4/0/0	5/0/0
Deals, Finland		
2nd & 1st std 100	6/10/0	9/0/0
Do. 4th & 3rd	6/0/0	6/10/0
Do. Riga	6/10/0	8/0/0
St. Petersburg, 1st yellow	9/0/0	13/0/0
Do. 2nd yellow	7/0/0	8/0/0
Do. white	8/0/0	10/0/0
Swedish	7/0/0	15/0/0
White Sea	7/0/0	15/10/0
Canada, Pine 1st	21/0/0	28/10/0
Do. do. 2nd	16/0/0	17/10/0
Do. do. 3rd &c.	7/10/0	10/5/0
Do. Spruce, 1st	8/10/0	11/0/0
Do. do. 3rd & 2nd	6/10/0	8/0/0
New Brunswick	6/0/0	7/10/0
Battens, all kinds	3/0/0	15/0/0
Flooring boards, sq., 1 in. prep. 1st	0/0/6	0/14/6
Do. 2nd	0/7/6	0/11/6
Other qualities—	0/4/6	0/7/0
Cedar, Cuba ..ft.	/4	/4½
Honduras, ..&c	/4	/4½
Mahogany, Cuba	/4	/6½
St. Domingo, cargo av.	/3	1/6
Mexican do. do.	/3½	/4½
Tobasco do. do.	/3½	/6½
Honduras do. ..	/4½	/6
Box, Turkey ton	4/0/0	13/0/0
Rose, Rio	9/0/0	20/0/0
Bahia	8/0/0	18/0/0
Satin, St. Domingo ..ft.	0/0/6	0/2/2

TIMBER (*continued*).

Satin, Porto Rico	0/0/7	0/1/6
Walnut, Italian ..	0/0/3½	0/0/7

METALS.

Iron—Pig, in Scotland ..ton	2/2/1½	0/0/0
Bar, Welsh, in London	5/17/6	6/0/0
Do. do. at works in Wales	5/7/6	5/10/0
Do. Staffordshire, in London	6/0/0	6/10/0
COPPER—British, cake and ingot	45/10/0	46/0/0
Best selected ..	47/0/0	47/10/0
Sheets, strong ..	54/0/0	0/0/0
Chili, bars	42/0/0	42/7/6
YELLOW METAL lb	0/0/4½	0/0/5
LEAD—Pig, Spanish ..ton	10 2/6	10/5/0
English com. brands	10/2/6	10/5/0
Sheet, English, 6 lbs. per sq. ft. and upwards	12/0/0	0/0/0
Pipe	12/10/0	0/0/0
ZINC—English sheet ..ton	21/15/0	0/0/0
Vieille Montagne	22/5/0	0/0/0
TIN—Straits	82/0/0	82/10/0
Australian	0/0/0	0/0/0
English Ingots	87/0/0	87/10/0
Banca	88/0/0	88/5/0
Billiton	87/0/0	87/5/0

OILS.

Linseed ..ton	20/15/0	20/17/6
Cocoanut, Cochin	29/0/0	0/0/0
Do. Ceylon	26/15/0	27/0/0
Palm, Lagos	26/0/0	26/10/0
Rapeseed, English pale	24/10/0	25/0/0
Do. brown	22/15/0	23/0/0
Cottonseed ref.	21/17/6	22/0/0
Oleine	22/0/0	23/10/0
Lubricating, U.S.	4/0/0	5/0/0
Do. refined	5/10/0	12/0/0
TAR—Stockholm barrel	0/18/6	0/0/0
Archangel	0/12/6	0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.*]

ABERDEEN, N.B.—Accepted for the execution of certain work at the waterworks reservoirs, Mannsfield, for the Town Council. Mr. Wm. Dyack, Engineer, Town House, Aberdeen:—
T. Bisset & Son, Aberdeen (revised schedule) ..£912 0 0

ABBOT'S LANGLEY (Herts).—For erecting new billiard-room, Manor House, Abbot's Langley, near Watford, Herts. Mr. R. Ardron, architect:—

Kirby & Sons	£638	Waterman & Son	£
Yerbury	580	Perkins & Co.	
Chessum & Son	549	Dove & Co.	
Tavener & Son	539		

AYLESBURY.—For metalling, kerbing, channelling, &c. Albion-street, Norfolk-terrace, and Mill-street, for the Local Board. Mr. J. H. Bradford, Surveyor, 2, Rickfords Hill, Aylesbury:—

A. T. Catley	£720 0	George Cannon	£571 5
Frederick Barlow	660 0	Henry Hill	533 6
Thos. Free & Sons	572 0	William Lee	533 2

BATH.—For the construction of a new road and sewer, Twerton-on-Avon, for the trustees of Bellott's Hospital. Mr. Henry Spackman, surveyor, 6, Terrace-walk, Bath:—

Parsons	£350	Chancellor, Twerton*	£
Ambrose	317	*Accepted.	

BATLEY (Yorks.)—For levelling, paving, &c., Jacob and Woodwell-streets; also sewering the former, for the Town Council. Mr. Henry Dearden, Borough Surveyor, Market-place, Batley. Quantities by Surveyor:—
Chas. Waterhouse, Idle, near Bradford (accepted at a schedule of prices).

BRIGG (Lincs.)—For the erection of Primitive Methodist Chapel, Barnetby:—

T. Manders	£747	0	0
Cooper Snowden, Grimsby (accepted)	660	0	0

COLYTON (Devon).—Accepted for the first portion of the works of restoring St. Andrew's Church, Colyton, Devon. Mr. George C. Strawbridge, architect, Alma-street, Taunton:—
W. Rendell, Taunton ..£500 0 0

CROYDON.—For alterations and additions to the Board School, South Norwood, for the Croydon School Board. Mr. Robert Ridge, architect:—

Jones	£1,246	Bullock	£1,150
Bacon	1,243	Umlandt & Nicoll	1,130
Bulled & Co.	1,240	Akers & Co.	1,120
Hubbard	1,230	Sedgwick	1,090
J. & C. Bowyer	1,229	Hanscomb & Smith	1,085
Bryan & Son	1,199	Smith & Son*	1,050
Taylor	1,163	*Accepted.	

DEVONPORT.—For the execution of water supply and drainage works, Millbrook, for the St. German's Union Rural Sanitary authority. Mr. H. Masterton, engineer, 1, Buckland-street, Plymouth. Quantities by Mr. Ernest J. Scown, Plymouth:—

Pethick Bros.	£8,984	R. T. Relf & Son	£7,997
J. Strachan	8,000	T. Shaddock	7,850
Lagthorn & Goad	7,496	W. Hill & Co.	7,650
W. Shaddock	7,414	E. Duke	7,600
G. Shellabear	7,373	W. Trevena	7,595
A. R. Debnam	7,325	H. Weldon, Birmingham*	5,500
J. Shaddock	7,138	*Accepted.	

DONCASTER.—For the erection of church, St. James-the-Less, at Hexthorpe, near Doncaster. Mr. Herbert Athron, architect:—

W Johnson	£5,566	W. Anelay, Doncaster*	£4,980
H. Arnold & Son	4,750	*Accepted.	

DONCASTER.—For the erection of new shops, offices, lecture-hall, &c., for the Doncaster Co-operative Mutual and Industrial Society, Limited. Mr. Herbert Athron, architect, Dolphin Chambers, Doncaster. Quantities by Mr. H. Beck, Hartlepool:—

W. Anelay	£8,755 0	W. Johnson	£7,770 0
C. Sprakes & Son	8,752 10	H. Arnold & Son Doncaster (accepted)	7,470 0
J. C. Wombwell	7,971 0		

DONCASTER.—For the erection of new Baptist Church and schools, Chequer-road, Doncaster. Mr. Herbert Athron, architect, Dolphin Chambers, Market-place, Doncaster. Quantities by Mr. H. Beck, Hartlepool:—

	Whole Scheme.	Church Only.
W. Anelay	£3,460	£2,435
J. C. Wombwell	2,698	2,321
W. Johnson	2,995	2,290
B. Wortley	3,122	2,190

DONCASTER.—Accepted for the erection of proposed School-Church in Chequer-road, Doncaster. Mr. Herbert Athron, architect, Dolphin Chambers, Doncaster. Quantities by the architect:—

B. Wortley, Doncaster £1,041 10 0

DONCASTER.—For the erection of new Congregational schools, lecture-hall, &c., Hall Gate, Doncaster. Mr. Herbert Athron, architect, Dolphin Chambers, Doncaster. Quantities by the architect:—

W. Johnson	£3,325	J. C. Wombwell	£2,884
W. Anelay	3,132	B. Wortley*	2,840

* Accepted for blocks 1 and 2.

DONCASTER.—For the erection of new business premises, Market-place, Doncaster, for Messrs. Pankin & Sons. Mr. Herbert Athron, architect, Dolphin Chambers, Doncaster:—

H. Arnold & Son	£2,330 0 0	Mullins & Richardson, Doncaster (accepted)	£2,233 19 0
B. Wortley	2,315 4 7		
W. Anelay	2,315 0 0		

DONCASTER.—For the erection of new stabling at Hexthorpe, near Doncaster, for the Doncaster Co-operative Society. Mr. Herbert Athron, architect, Dolphin Chambers, Market-place, Doncaster. Quantities by the architect:—

S. Beastall	£610	W. Anelay	£546
W. Johnson	570	H. Arnold & Son, Doncaster*	485

* Accepted.

DONCASTER.—For the erection of new stabling, &c., at the "Boot and Shoe Inn," Balby, Doncaster. Mr. Herbert Athron, architect, Dolphin Chambers, Doncaster:—

H. Wortley	£280 0 0
S. Beastall, Doncaster (accepted)	255 0 0

DURHAM.—For pulling down buildings and erecting a butcher's shop, slaughterhouse, &c., Claypath, for the Durham Co-operative Society, Limited. Mr. George Ord, architect, 16, The Avenue, Durham. Quantities by Messrs. Boreham & Morton:—

Kell	£2,578 17 6	F. Caldcleugh	£2,350 0 0
Lodge & Sons	2,568 12 2	W. Pratt	2,230 0 0
J. Shepherd	2,430 0 0	J. G. Robson	2,205 9 0
J. White	2,387 16 7	J. Whaley, Durham*	2,183 11 0
W. Wardropper	2,360 17 0		

* Accepted.

[Architect's estimate, £2,175.]

FAWLEY (Hants.).—For additions and alterations to school buildings, for the School Board. Mr. D. Davy, surveyor, Cadland, Southampton:—

Jas. Ball & Son	£394 0	R. Talling	£351 0
H. Bowman	388 7	C. Cole	340 0

GLOUCESTER.—For the erection of school buildings to accommodate 813 children, with cookery centre, quarters, &c., Linden-road, for the School Board. Messrs. Medland & Son, architects, Gloucester. Quantities by Mr. F. E. Godwin, surveyor, Heathville-road, Gloucester:—

	Buildings.	Road.
H. A. Forse	£13,600 0 0	£717 0 0
H. Welsh	13,000 0 0	500 0 0
Wm. Bowers & Co.	12,945 0 0	375 0 0
H. Willcock & Co.	12,764 0 0	270 0 0
A. King & Sons	12,577 0 0	272 0 0
D. C. Jones & Co.	12,310 0 0	270 0 0
William Jones	12,240 0 0	300 0 0
Wm. Fream & Son	12,000 0 0	265 0 0
E. Clutterbuck	11,690 0 0	366 12 0
W. E. Shaw	11,420 0 0	360 0 0
Gurney Brothers, Gloucester	10,449 0 0*	325 0 0*

* Accepted subject to approval by Education Department.

GRAVESEND.—For works of repair, &c., at the Royal Terrace Pier, Gravesend. Mr. John J. Robson, engineer, 3, Victoria-street, Westminster:—

W. Hocking	£1,981	Archer	£1,465
Multon & Wallis	1,628	Maddison	1,398
Richd. Avard	1,506	Wilder, Gravesend*	1,311

* Accepted.

HARROGATE (Yorks.).—Accepted for alterations and additions to Selborne House, Harrogate, for Mr. Edwin Oldroyd. Mr. T. Butler Wilson, architect, Leeds and Harrogate:—

Thomas Linskill, Harrogate £503 7 7

HARROGATE (Yorks.).—Accepted for alterations and additions to Duchy House, Harrogate, for Mr. Harry Mitchell. Mr. T. Butler Wilson, architect, Leeds and Harrogate:—

Thomas Linskill. Harrogate £787 6 4

HAVANT (Hants.).—For the erection of an isolation hospital, administrative block, wall, &c., for the Joint Hospital District Board. Mr. G. C. Vernon-Inkpen, architect, 6, King's-road, Southsea:—

T. P. Hall	£2,455	J. Crockerel	£2,318
Spriggins	2,409	G. Staples	2,243
J. H. Corke	2,340	G. Stallard (accepted)	2,185

HEADINGLEY (Yorks.). — Accepted for two semi-detached houses, Cardigan-road, Headingley, Leeds, for Mr. Herbert Slater. Mr. T. Butler Wilson, architect, Leeds and Harrogate:—

Bricklayer.—John Pickard, Leeds £504 16 6
Joiner.—George Musgrave, Leeds 284 3 1
Slaters.—Sharp & Harper, Leeds 29 15 5
Plasterer.—William Pennington, Leeds 117 17 10

£936 12 10

HOVE.—For the rebuilding of the Hove Boat Club, for Mr. John Tooth. Mr. Paul B. Chambers, architect, Ship-street Chambers, Brighton:—

G. R. Lockyer	£857	W. & T. Garrett*	£840
J. Parsons & Sons	843		

* Accepted.

HOVE (Sussex).—For the erection of premises for the Hove Baths and Laundry Company, Limited. Mr. Paul B. Chambers, architect, Ship-street Chambers, Brighton. Quantities by Mr. Frank H. Humphreys, Hastings:—

Bostel Bros.	£15,191	J. Longley & Co.	£12,979
C. J. Slade	14,230	P. Peters	12,200
C. Jackson	13,270	J. Parsons & Sons*	12,100

* Accepted.

LEATHERHEAD (Surrey).—For additions at the Leatherhead Institute for Mr. Abraham Dixon. Mr. Paul B. Chambers, architect, Ship-street Chambers, Brighton:—

Holloway Bros.	£325	G. & W. Brown (accepted)	£210
Henry Skilton	269		

LIVERPOOL.—For erecting clergy vestry at Holy Trinity Church, Walton Breck. Mr. T. C. Ebdy, architect. Marldon Chambers, Liverpool:—

Wm. Bleakley	£178 0	Lucas, Hockenhull, & Jennings	£144 10
E. Burns	170 0		

LIVERPOOL.—For building the Church of St. Simon and St. Jude, Anfield, Liverpool, using the old materials of St. Barnabas (City) by Act of Parliament under Trustees. Mr. T. C. Ebdy, architect, Marldon Chambers, Liverpool. Quantities by the architects:—

		Addenda.*
Hughes & Sterling	£7,700 0 0	£1,600 0 0
Thomas Foxcraft	7,482 0 0	1,550 0 0
Raffle & Campbell	7,000 0 0	1,370 0 0
Morrison & Sons	6,996 0 0	1,200 0 0
Saml. Webster	6,991 0 0	1,513 0 0
Paterson & Son	6,795 0 0	1,410 0 0
W. Winnard	6,687 0 0	1,338 0 0
F. G. Woods & Son	6,274 0 0	1,125 0 0
McDermott	6,135 0 0	1,068 0 0
Edward Burns	5,682 0 0	923 0 0

[Architect's estimate, exclusive of Addenda, £5,000.]

* The Addenda is for first stage of tower, boundary walls, &c.

LLANHILLETH (Wales).—For the erection of school buildings, for the School Board. Messrs. A. Swash & J. Bain, architects, 3, Friar's-chambers, Newport, Mon.:—

D. Lewis	£2,802 0	D. C. Jones & Co.	£2,131 0
N. Bagley	2,435 8	E. C. Newby & Co., Cardiff*	1,932 15
T. Evans	2,200 0		

* Provisionally accepted.

LONDON.—For rebuilding premises, 86, Mortimer-street, Regent-street:—

Woodward	£2,560	Falkner	£2,207
Downs	2,540	Adamson	2,194
Williams	2,449	Manley	2,074
Perkins & Co.	2,350		

LONDON.—For making-up Richmond, Clarendon, Almond, Lincoln, and Fairfax roads, for the Tottenham Local Board. Mr. J. E. Worth, engineer, Coombes Croft House, High-road, Tottenham. Quantities by Messrs. Campbell & Son, Finsbury Pavement, E.C.:—

—	Richm'd-road, otherwise Charles-street.	Clarendon-road.	Almond-road.	Lincoln-road.	Fairfax-road.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Thos. Rowley, Tottenham	*1659 2 9	*1173 11 10½	*897 12 1	444 13 0½	*856 4 9
W. Griffiths	1982 0 0	1440 0 0	948 0 0	461 0 0	997 0 0
Thos. Adams	1940 17 9	1370 3 6	934 0 7	449 14 1	961 12 7
J. Neave	2102 0 0	1485 0 0	1013 0 0	519 0 0	1061 10 0
Thos. Catley, Lloyd-square, W.C.	1665 0 0	1251 0 0	—	*420 0 0	885 0 0
W. Nicholls	—	—	—	—	883 16 0
W. Walker	2143 10 1	1517 2 10	—	576 6 8	1094 15 0
J. E. Bloomfield	1847 18 8	1370 5 0	900 10 7	430 17 6	946 13 8

* Accepted.

LONDON.—For the relaying of defective sewers in Thorold and part of Marlborough-roads, Bowes Park, Wood Green, N., for the National Land Corporation, Limited. Messrs. Pooley & Follett, surveyors, 21, John-street, Adelphi, W.C.:—

Samuel Chafew	£599 0 0	William Griffiths	£383 10 10
Stephen Kavanagh	435 0 0	Alfred Wood	317 2 0
Thomas Adams	419 0 0	Reuben Hill, South Tottenham, N.*	290 11 4
William Nicholls	385 0 0		

* Under consideration.

LONDON.—Accepted for kerbing and tar-paving the footpaths, and channelling and metalling the roadway of Woolstone-road, Catford, for the Lewisham Board of Works. Mr. John Carline, Surveyor, Board of Work Offices, Catford, London, S.E.:—

John Mowlem & Co., Grosvernor Wharf, Millbank, S.W. £2,650

LONDON.—For alterations and additions to the Beaumont Hall, Mile End, E., for the Committee of the Tower Hamlets Conservative Club. Quantities supplied by Mr. William Stewart, 66, Victoria-street, S.W.:—

S. W. Hawkings	£2,293	F. & F. J. Wood	£2,200
Harris & Wardrop	2,273	W. J. Maddison	2,099
F. & H. Cocks	2,249		

LONDON.—For new sanitary arrangements at No. 63, Earls Court-square. Messrs. Morley & Letts, surveyors, 185, Earls Court-road, S.W.:—

E. K. Wilson	£184
J. Whitaker, Earls Court-road (accepted)	178

LONDON.—For certain alterations to the Chesterfield Café, Chesterfield House, Great Tower-street, E.C., for the directors of the London Clerks' Café Company, Limited. Messrs. Pooley & Follett, architects, 21, John-street, W.C.:—

S. Yardley & Sons	£316 13 0	J. W. Mellor, Kentish Town*	£267 10 0
Saywell & Pope	312 19 2		
Scharien & Co.	311 0 0		

* Under consideration.

LONDON.—For erecting shops and chambers, Mount-street and South Audley-street, W. Mr. A. J. Bolton, architect, 55, Lincoln's-inn-fields, W.C. Quantities by Messrs. G. Silvester & T. J. Fife:—

Boyce	£35,649	Toms	£31,692
Patman & Fotheringham	34,080	Allen & Son	30,465
Lawrence	34,053	Peek	29,845
Brass & Son	33,873	Kirk & Randall	29,834
Nightingale	33,211	Perry & Co.	29,487
Langdale, Hallett, & Co.	31,801		

LONDON.—For carrying out the necessary improvements to the drains, &c., of the Hunter-street School, Southwark, for the School for London. Mr. T. J. Bailey, Architect:—

G. Lyford	£1,176 10 4	W. & H. Castle	£1,007 0 0
Black & Son	1,130 0 0	J. T. Robey	947 13 3
W. V. Goad	1,079 0 0	A. Salter, 33, Roderick-road, N.W.*	921 0 0
W. Hammond	1,055 0 0		
Whitehead & Co.	1,034 0 0		

* Recommended by the Works Committee for acceptance.

LONDON.—For erecting new water-closets for the infants' department of the Oban-street School, Bromley, and for making the necessary connexions with the drainage, for the School Board for London. Mr. T. J. Bailey, Architect:—

Davis Bros.	£558	Gibb & Co.	£343
J. T. Robey	405	White & Son, Fairfield-road, Bow*	299
Knight & Son	£386		
Calnan & Co.	360		

* Recommended by the Works Committee for acceptance.

LONDON.—For providing apparatus on the low pressure hot-water system for warming the whole of the York-road School, King's-cross, for the School Board for London. Mr. T. J. Bailey, Architect:—

W. G. Cannon	£433	Purcell & Nobbs	£372
Green & Sons, Limited	402	Clarke & Sons	368
G. Davis	375	Maguire & Son, Dublin*	326

* Recommended by the Works Committee for acceptance.

LONDON.—For removing a temporary iron building from the Belleville-road site, New Wandsworth, and for re-erecting it on the Dulwich Hamlet site, for the School Board for London. Mr. T. J. Bailey, Architect:—

D. Charteris	£315 0	T. Cruwys, Caroline-street, Camden Town*	£275 0
Croggon & Co.	306 10		
W. Harbrow	294 17		

* Recommended by the Works Committee for acceptance.

LONDON.—For the erection of class-rooms for cookery and laundry (combined), and blind children, on the site in Princeton-street, Bedford-row, for the School Board for London. Mr. T. J. Bailey, Architect:—

	For brick-work in cement, add
A. Salter	£1,607 0 0 ... £34 0 0
G. S. Williams & Son	1,556 0 0 ... 31 0 0
Taylor & Son	1,534 0 0 ... 27 10 0
C. Cox	1,513 0 0 ... 31 0 0
W. Neil	1,469 14 7 ... 27 10 0
J. Willmott & Sons, Hitchin	1,403 10 0* ... 34 10 0*

* Recommended by the Works Committee for acceptance.

LONDON.—For the erection of a junior mixed school on the South Lambeth-road site, to provide accommodation for 420 children, and for other works, for the School Board for London. Mr. T. J. Bailey, Architect:—

	For brick-work in cement, add
F. & H. F. Higgs	£6,789 0 0 ... £87 0 0
Holloway Bros.	6,279 0 0 ... 76 0 0
W. Downs	6,270 0 0 ... 75 0 0
Holliday & Greenwood	6,167 0 0 ... 89 0 0
J. Marsland	6,111 0 0 ... 105 0 0
B. E. Nightingale	6,093 0 0 ... 93 0 0
D. Charteris	5,990 0 0 ... 96 0 0
Lathey Brothers, St. George's Works, Battersea Park	5,997 0 0* ... 72 0 0

* Recommended by the Works Committee for acceptance.

LONDON.—For the erection of a pupil teachers' school and a junior mixed school on the Burghley-road site, Kentish Town, for the School Board for London. Mr. T. J. Bailey, Architect:—

	For brick-work in cement, add
G. S. Williams & Son	£14,851 0 0 ... £280 0 0
J. Grover & Sons	14,812 0 0 ... 263 0 0
D. Charteris	14,724 0 0 ... 263 0 0
J. Allen & Sons	14,721 0 0 ... 171 0 0
C. Cox	14,328 0 0 ... 261 0 0
E. Lawrance & Sons, Wharf-road, City-road	14,152 0 0* ... 263 0 0*

* Recommended by the Works Committee for acceptance.

LONDON.— For enlarging the Keeton's-road School, Bermondsey, by 525 places and for other works, for the School Board for London. Mr. T. J. Bailey, Architect:—

	For brick-work in cement, add
J. Shillitoe & Son	£15,425 0 0 ... £200 0 0
Holliday & Greenwood	14,910 0 0 ... 210 0 0
Holloway Bros.	14,730 0 0 ... 190 0 0
W. Downs	14,424 0 0 ... 235 0 0
Lathey Bros	14,282 0 0 ... 220 0 0
E. Lawrance & Sons	14,180 0 0 ... 198 0 0
J. Tyerman	14,167 6 0 ... 265 0 0
J. Marsland	13,845 0 0 ... 220 0 0
Stimpson & Co.	13,630 0 0 ... 264 0 0
J. & M. Patrick, Rochester	12,776 0 0* ... 176 0 0*

* Recommended by the Works Committee for acceptance.

LONDON. — For enlarging the infants' department of the Bellenden-road School, Peckham, by forty-seven places, and for other works, for the School Board for London. Mr. T. J. Bailey, Architect:—

	For brick-work in cement, add
F. & H. F. Higgs	£3,646 0 0 ... £90 0 0
J. Willmott & Sons	3,585 0 0 ... 75 0 0
Holliday & Greenwood	3,557 0 0 ... 88 0 0
J. Smith & Sons, Lower Norwood	3,472 0 0* ... 50 0 0*

* Recommended by the Works Committee for acceptance.

LONDON.—For the provision of deaf and laundry centres on the site in Farrance-street, Limehouse, for the School Board for London. Mr. T. J. Bailey, Architect:—

	For brick-work in cement, add
A. Black & Son	£2,355 0 0 ... £54 0 0
W. Neil	2,323 17 9 ... 54 15 9
J. T. Robey	2,054 0 0 ... 36 0 0
J. Grover & Son	2,033 0 0 ... 33 0 0
E. Lawrance & Sons	2,002 0 0 ... 32 0 0
Charles Cox, Hackney	1,955 0 0* ... 31 0 0*

* Recommended by the Works Committee for acceptance.

LONDON.—For erecting cookery and laundry centres on the Buckingham-street site, Islington, and for other works, for the School Board for London. Mr. T. J. Bailey, Architect:—

	For brick-work in cement, add,
J. Grover & Sons	£2,931 0 0 ... £61 0 0
McCormick & Sons	2,887 0 0 ... 62 0 0
Treasure & Son	2,610 0 0 ... 82 0 0
J. Willmott & Sons	2,466 10 0 ... 72 0 0
Charles Cox, Hackney	2,467 0 0* ... 58 0 0*

* Recommended by the Works Committee for acceptance.

LONDON.—For the provision of deaf and laundry centres on the Stanhope-street site, Hampstead-road, and other works, for the School Board for London. Mr. T. J. Bailey, Architect:—

	For brick-work in cement, add
A. Salter	£2,349 13 3 ... £32 4 0
G. Lyford	2,277 19 0 ... 36 0 0
E. Houghton & Sons	2,234 0 0 ... 38 0 0
Taylor & Son	2,052 13 3 ... 32 4 0
H. Knight & Sons, Tottenham*	1,863 0 0 ... 29 0 0

* Recommended by the Works Committee for acceptance.

LONDON.—For erecting laundry and cookery centres on the Summer-road site, Peckham, and for other works, for the School Board for London. Mr. T. J. Bailey, Architect:—

	For brick-work in cement, add
D. Charteris	£3,615 0 0 ... £43 0 0
J. Longley & Co.	3,575 0 0 ... 37 0 0
Holloway Bros.	3,499 0 0 ... 39 0 0
Stimpson & Co.	3,440 0 0 ... 60 0 0
F. & H. F. Higgs	3,398 0 0 ... 56 0 0
Holliday & Greenwood	3,125 0 0 ... 44 0 0
Lathey Bros.	3,102 0 0 ... 45 0 0
B. E. Nightingale	2,896 0 0 ... 48 0 0
J. Marsland	2,566 0 0 ... 45 0 0
J. Tyerman, Walworth-road	2,536 0 0* ... 46 0 0*

* Recommended by the Works Committee for acceptance.

LONDON.—For removing a temporary iron building from the Lillie-road site, Fulham, and for re-erecting it on the Laxon-street site, Bermondsey, for the School Board for London. Mr. T. J. Bailey, Architect:—

Croggon & Co., Limited	£241 10	T. Cruwys, Caroline-street, Camden Town*	£212 0
W. Harbrow	231 0		
D. Charteris	215 0		

* Recommended by the Works Committee for acceptance.

LONDON.—For providing a small apparatus on the low-pressure hot-water system (with a vertical boiler) for warming the school for Special Instruction, Sayer-street, Walworth, for the School Board for London. Mr. T. J. Bailey, Architect:—

G. Davis	£135	J. & F. May	£117
Wontner Smith, Gray, & Co.	129	W. G. Cannon	115
Wenham & Waters, Limited	119	Clarke & Sons, Moorgate-street, E.C.*	94

* Recommended by the Works Committee for acceptance.

LONDON.—For interior cleaning, &c., of Great Wild-street school, for the School Board for London. Mr. T. J. Bailey, Architect:—

Vigor & Co.	£218	T. Cruwys	£172
Eyers	195	Johnson	151
Horne	180	Marchant & Hirst	149

LONDON.—For exterior painting, &c., of Brackenbury-road School, for the School Board for London. Mr. T. J. Bailey, Architect:—

Sutherland	£257 16 0	Brown	£133 16 0
Ware	225 10 0	Mowlem & Co.	128 0 0
Marchant & Hirst	188 0 0	Anderton	123 6 6
Jones & Co.	166 0 0	White & Co.	90 0 0
Polden	155 0 0	Buckeridge	68 19 0

LONDON.—For interior cleaning, &c., of Yerbury-road School, for the School Board for London. Mr. T. J. Bailey, Architect:—

Cox	£232 10	Stevens Bros.	£160 10
Marchant & Hirst	196 10	Houghton & Son	159 0
Taylor & Son	175 0		

LONDON.—For reconstructing the drainage of the Harper-street School, New Kent-road, for providing a urinal, and also for improving the ventilation of the boys' offices, for the School Board for London. Mr. T. J. Bailey, Architect:—

H. J. Williams	£950	W. & H. Castle	£725
J. N. Cainan & Co.	830	J. Tyerman	713
Leeks & Hooker	795	B. E. Nightingale, Albert Embankment, S.E.*	629

* Recommended for acceptance by the Works Committee.

LONDON.—For new class-room partitions, &c., at the Portman Place Schools, for the School Board for London. Mr. T. J. Bailey, Architect:—

W. Gregor & Son	£377	D. Gibbs & Co.	£325
J. N. Cainan & Co.	330	T. White & Son	310

LONDON.—For alterations to premises, 319, Bow-road, for Messrs. Emery & Son:—

White & Son (accepted as amended) £942 0 0

LONDON.—For alterations and additions to "The Chequers" beer house, High-road, Tottenham, for Mr. H. B. Wooldridge. Mr. J. E. Pinder, architect, Bridge House, South Tottenham:—

Symes	£570	Knight & Son	£397
Reed, Blight, & Co.	398	Porter	330

LONDON.—Accepted for alterations and decorative works at the Westminster Town Hall. Mr. G. R. W. Wheeler, surveyor:—

N. Lidstone, Finsbury Park £306 0 0

LONDON.—For the erection of stabling for eight horses, and lobby on the coal wharf of the Midland Railway Company, for Messrs. H. Lacey & Co. Mr. T. Galetti, architect:—

W. Marks, Fulham (accepted) £349 0 0

LONDON.—For new roof and sundry alterations, Charlotte-street, Fitzroy-square:—

Webber	£1,021	Lupton	£810
Perkins & Co.	839		

LONDON.—For general repairs and decorations, Montague-street, Portman-square. Mr. S. G. Parry, architect:—

Bywaters	£1,130	Perkins & Co.	£974
Coles & Son	985	Patrick & Son	934

LONDON.—For rebuilding two houses, Bethnal Green-road. Messrs. Hovenden & Barber, architects:—

Holloway	£2,213	Perkins & Co.	£2,067
Higgs	2,198	Scrivener & Son	1,989
Titmas	2,197		

MORTON (Lincs).—Accepted for the erection of a Wesleyan Methodist Chapel. Mr. Wills, architect, Derby;—

A. T. Blood, North-road, Bourne £297 9 0

NEWPORT (Mon.).—For the erection of semi-detached villas, Fields Park Estate, for Mr. T. James. Messrs. A. Swash & Jno. Bain, architects, 3, Friar's Chambers, Newport, Mon. Quantities by the architects:—

D. C. Jones & Co.	£2,496	W. M. Blackburn	£2,257
E. Richards	2,457	T. Webb	2,246
Heatherley & Carr	2,387	W. A. Linton	2,230
T. G. Diamond	2,355	John Linton, Commercial Buildings, Newport*	2,098
W. H. Reed	2,300		

* Accepted.

NEWTON ABBOT (Devon).—For the erection of a pair of cottages, Gestridge, Kingsteignton. Mr. G. S. Bridgman, architect, Paignton, Devon:—

Bovey	£434 17	R. Yeoman, Kingsteignton*	£345 0
H. Mills	425 0		
Fay	384 0		

* Accepted.

PENRITH.—For pipes, hydrants, &c., and the execution of water-supply works, Gamblesby (four contracts), for the Union Rural Sanitary Authority. Mr. G. Watson, engineer, 3, St. Andrew's-place, Penrith. Quantities by the engineer:—

Contract No. 1.—Pipes.

Cochrane & Co.	£308 13 8	R. Feldtmann & Co.	£267 9 5
Clay Cross Co.	290 17 4	Cameron & Roberton	267 2 0
Harrison & Burn	288 4 0	Macfarlane, Strang, & Co.	262 18 5
Watson Gow, & Co.	286 1 8	Exors. of late D. Clark	261 17 5
E. & W. H. Haley	285 12 0	R. Laidlaw & Son	259 1 7
G. Stanfield	280 14 6	J. Whittle & Son	256 7 6
Shaw & Co.	279 16 7	H. J. Skelton & Co.	254 1 4
Cochrane, Grove, & Co.	279 2 6	J. Kitchie, Acklam Foundry, Middlesbrough*	249 13 4
Stanton Iron Works	279 0 3	Dodds Brothers & Co.	249 13 4
Birtley Iron Co.	274 4 0	H. Fisher & Co.	248 8 0
R. Maclaren & Co.	273 5 0		
T. Allan & Sons	270 16 6		
Jos. Jackson	270 2 6		

Contract No. 2.—Valves and Hydrants.

Exors. of late D. Clark	£92 14 0	Macfarlane, Strang, & Co.	£63 6 10
G. Waller & Co.	91 7 0	Glenfield Co.	59 8 4
R. Laidlaw & Son	85 3 11	Stone & Co.	59 4 4
Harrison & Burn	80 14 3	Hamilton Woods, & Co.	49 10 6
H. Fisher & Co.	74 16 6	J. Blakeboro & Sons, Brighouse, Yorkshire*	48 7 8
Whitley Partners	68 12 0		
H. J. Skelton & Co.	66 10 6		
Dodds Brothers & Co.	63 15 4		

Contract No. 3.—Carting and Laying Mains.

J. Gatt	£233 5 6	H. Fisher & Co.	£178 2 0
Harrison & Burn	188 12 3	Jos. Jackson, Penrith*	167 3 6
G. Dixon	181 7 8	Joseph Dixon	158 9 0

Contract No. 4.—Reservoir and Collecting Tank.

H. Fisher & Co.	£208 10 0	Harrison & Burn	£158 10 0
A. Watson	168 0 0	Jos. Jackson, Penrith*	147 15 6
G. Dixon	163 7 6		

For the Whole Works.

Harrison & Burn	£716 0 6	Jos. Jackson	£637 11 6
H. Fisher & Co.	709 15 6		

* Accepted.

PONTYPRIDD.—For rebuilding shop premises, Market-square, for Messrs. Jones & Co. Mr. R. L. Griffiths, architect, Tonypandy. Quantities by the architect:—

Howell Powell	£2,881 3 11	Michael Julian	£1,994 0 0
Watkin Williams	2,600 0 0	D. C. Jones & Co., Gloucester*	1,974 0 0
Alf. Richards	2,291 16 8		
Williams & Jones	2,210 0 0		

* Accepted.

RAMSGATE.—For the erection of boundary walls, potting house, and greenhouse, for the Ramsgate Corporation;—

Paramor & Son	£368 10	W. Martin	£280 0
W. Purser	357 7	C. Home	269 19
H. Duckett	325 0	J. Forwalk	268 10

ROMFORD.—For alterations and additions to "Fernleigh," Victoria-road, Romford, Essex. Messrs. Morley & Letts, surveyors, 185, Earls Court-road, London, S.W.:—

Dowsing & Davis	£550	J. S. Hammond & Son, Romford (accepted)	£394
Bruty	544		

SHEERNESS.—For the supply of 366 tons of water-pipes (cast-iron), about eight miles in length, for the Sheerness Local Board of Health. Mr. Wm. Wallace Copland, engineer, Sheerness:—

E. & W. H. Haley	£1,964 6 4	John Dickson & Co.	£1,667 1 6
T. W. Coke	1,934 19 0	Stanton Iron Works	1,664 19 0
J. E. Castle	1,916 18 0	H. Laidlaw & Son	1,635 19 5
Cochrane & Co.	1,791 4 7	Birtley Iron Works	1,635 11 9
Emile Cloes	1,783 15 6	James Gibb & Co.	1,610 6 2
Clay Cross	1,777 16 9	Cochrane, Grove, & Co.	1,580 17 4
Lawrie & Co.	1,757 1 3	Dodds, Bros. & Co.	1,551 2 7
Alfreton Iron Works	1,741 5 3	J. Coates & Co., London*	1,534 15 8
Biggs, Wall, & Co.	1,719 7 11	James Ritchie (for part only)	1,356 11 10
Romans & Son	1,717 11 4		
J. & S. Roberts, Ltd.	1,708 11 0		
Stavely Iron Co., Ltd.	1,681 11 5		

* Accepted.

Steel Tubes (for part only).

Thames Bank Iron Company £1,725 10 8

TAUNTON.—Accepted for the erection of shops and premises, Magdalene-street, for the Taunton Co-operative and Industrial Society. Mr. Geo. C. Strawbridge, architect, Alma-street, Taunton:—

W. Rendell, Taunton £1,850 0 0

TONBRIDGE (Kent).—For the erection of a club house, Tonbridge, for the Club Company, Limited. Messrs. Wadmore & Mallett, architects, 35, Gt. St. Helens, E.C. Quantities by the architects:—

	With extension of Basement and warming.
Arnaud & Son	£3,670 £3,840
J. Crossley	3,640 3,815
J. Mitchell	3,550 3,710
D. Payne	3,539 3,688
W. Wiltshire	3,033 3,193
C. Gallard	2,963 3,119
G. Mansfield & Sons	2,959 3,104
E. Punnett	2,823 2,971
Strange & Sons	2,788 2,932
J. Otway	2,737 2,877
R. A. Lowe	2,699 2,833
R. Avard	2,629 2,767
Langridge & Sons	2,580 2,715
G. Jones, Tonbridge*	2,393 2,513

*Accepted. The amounts are given in round figures.

WALTHAMSTOW.—For making-up and laying concrete flags in Wilson-street, Alfred-street, and Fraser-road, Walthamstow, for the Walthamstow Local Board. Mr. Geo. W. Holmes, Surveyor to the Local Board, Town Hall, Walthamstow:—

Making-up.—J. Reeves, Walthamstow (accepted). £540 0 0

WEST HAM.—For erecting new lodge at Recreation Ground, Canning Town, for the Corporation of West Ham. Mr. Lewi Angell, Engineer:—

Neal	£803 12 1	Holland	£468 0
Welsh & Son	660 9	White & Son (accepted)	445 10
Carpenter and Joiners' Co-operative Society	645 10	Hobbs	397 0 1

[Engineer's estimate, £460.]

WEST LULWORTH (Dorset).—For the erection of a residence at West Lulworth, for Mrs. Silvertop. Mr. F. R. Bates, architect, Newport, Mon.:—

A. Harvey	£1,630 0	W. J. Watkins	£1,371 16 0
G. Runyard	1,549 7 9	D. Hitching	1,152 10 0
G. Hobbs	1,535 0 0		

WOOL (Dorset).—For the erection of the "Black Bear" Hote at Wool, for Mr. Stephen W. Bennett. Mr. F. R. Bates, architect, Newport, Mon.:—

J. Lawes	£1,400 0 0	G. Hobbs	£985 0 0
A. Harvey	1,110 9 9	G. Runyard	827 17 3

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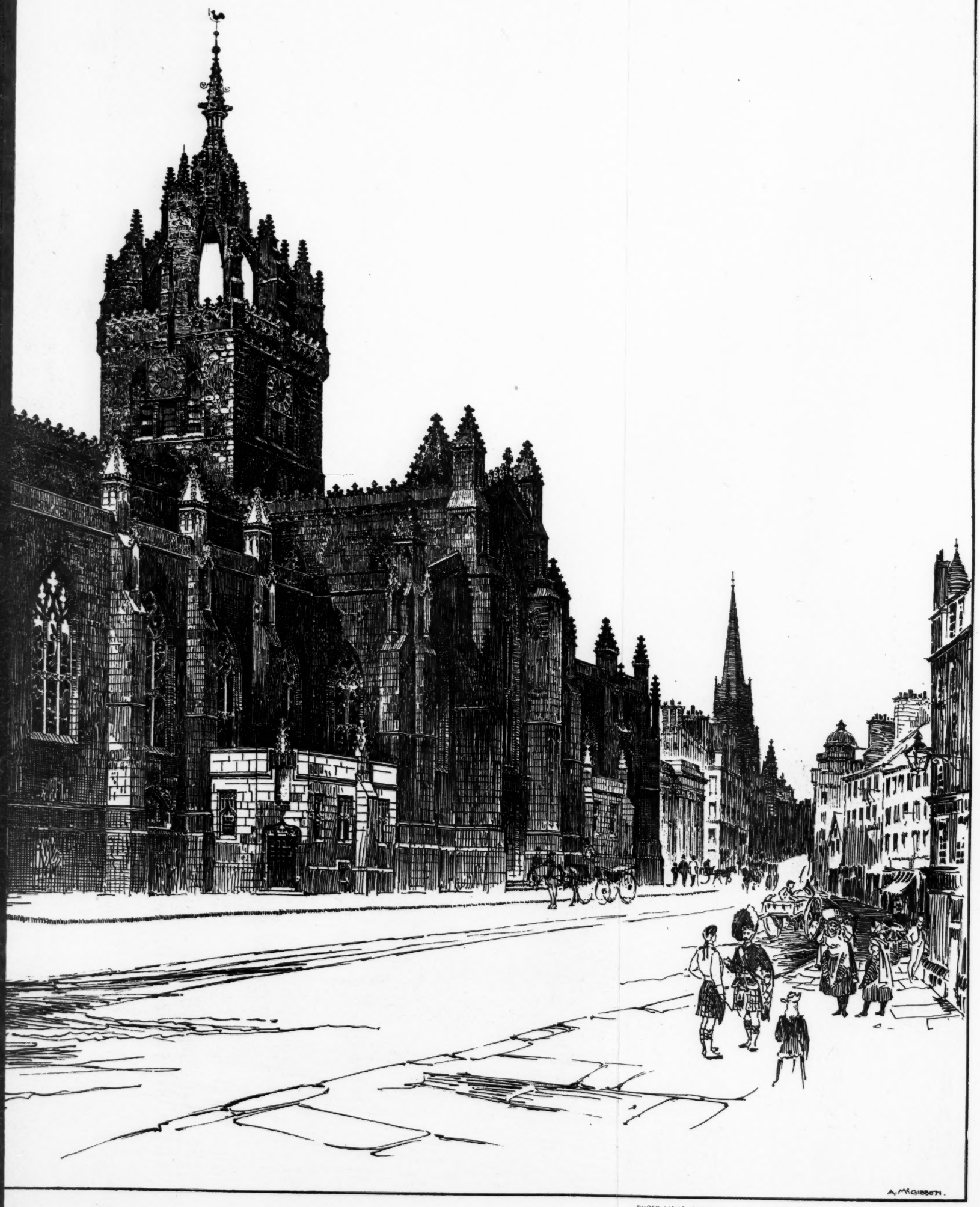
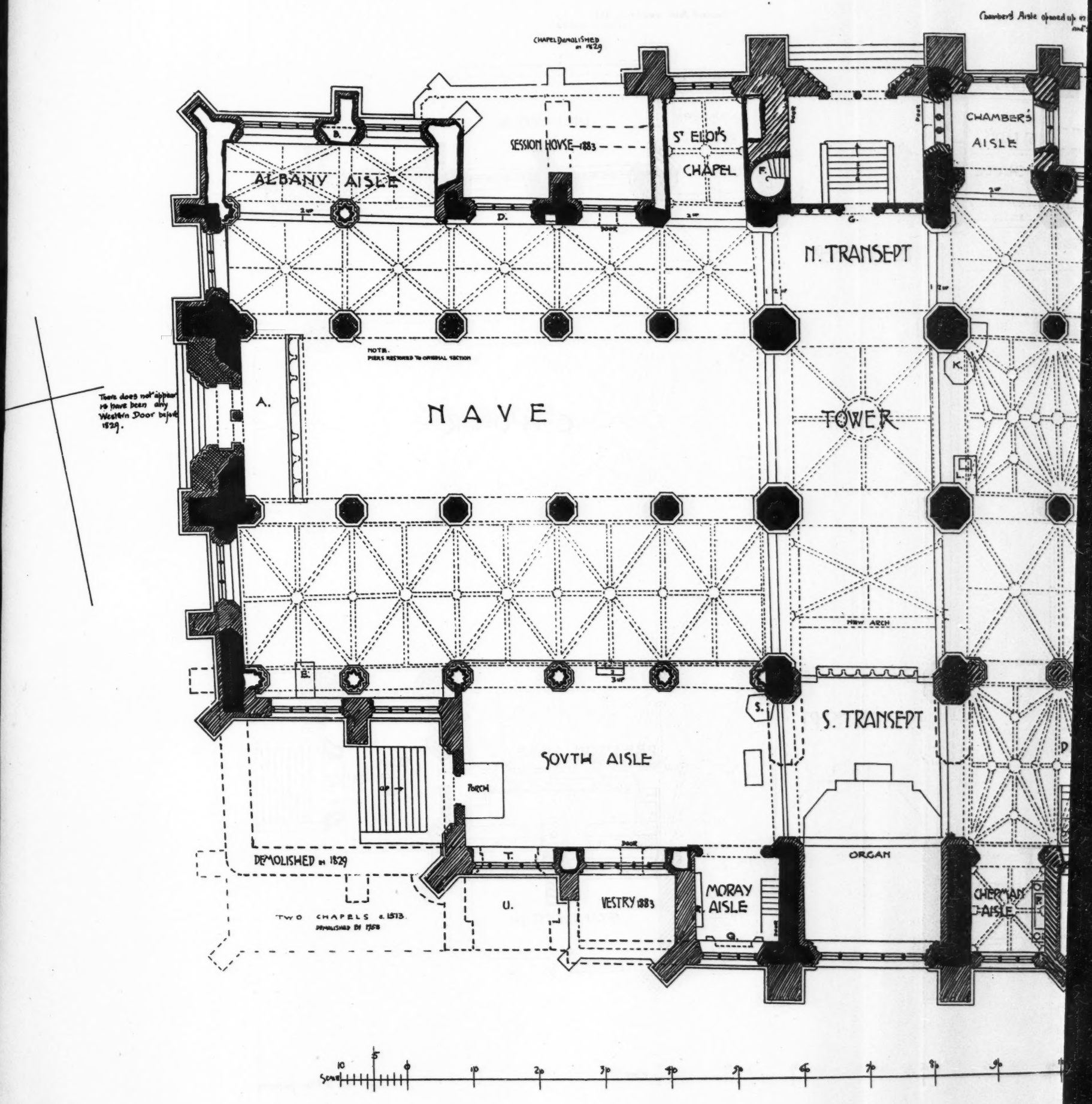


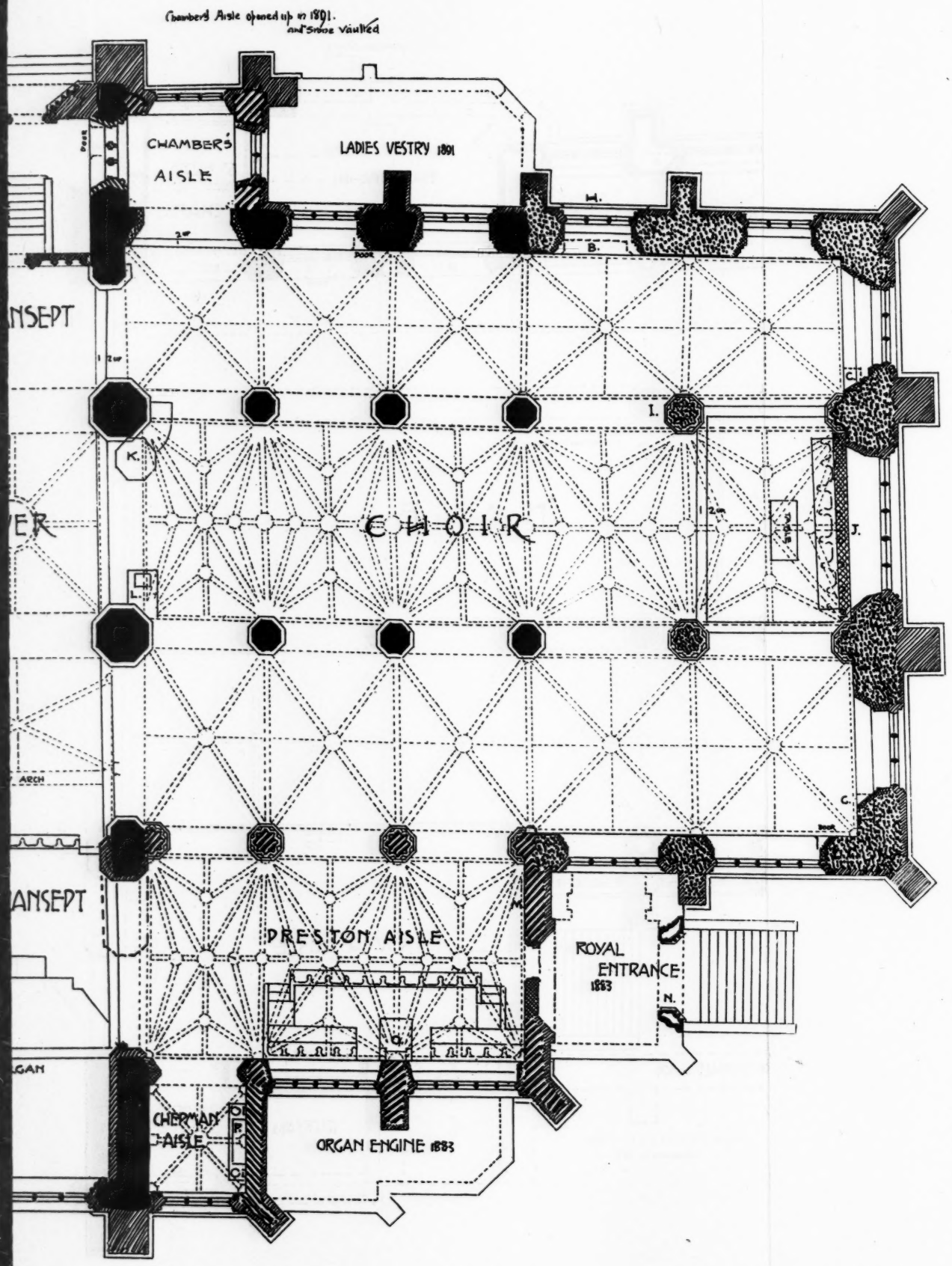
PHOTO-LITHO. SPRAGUE & Co. 4 & 5 EASTHARDING STREET FETTER LANE E.C.

OF SCOTLAND.—Drawn by Mr. Alexander McGibbon.

ST. GILES'S, EDINBURGH.

St GILES' CATHEDRAL
EDINBURGH




Chambers Aisle opened up in 1891.
and Screen Vaulted
CHAMBERS
AISLE
LADIES VESTRY 1891
NSEPT
ER
CHOIR
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ANSEPT
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ROYAL
ENTRANCE
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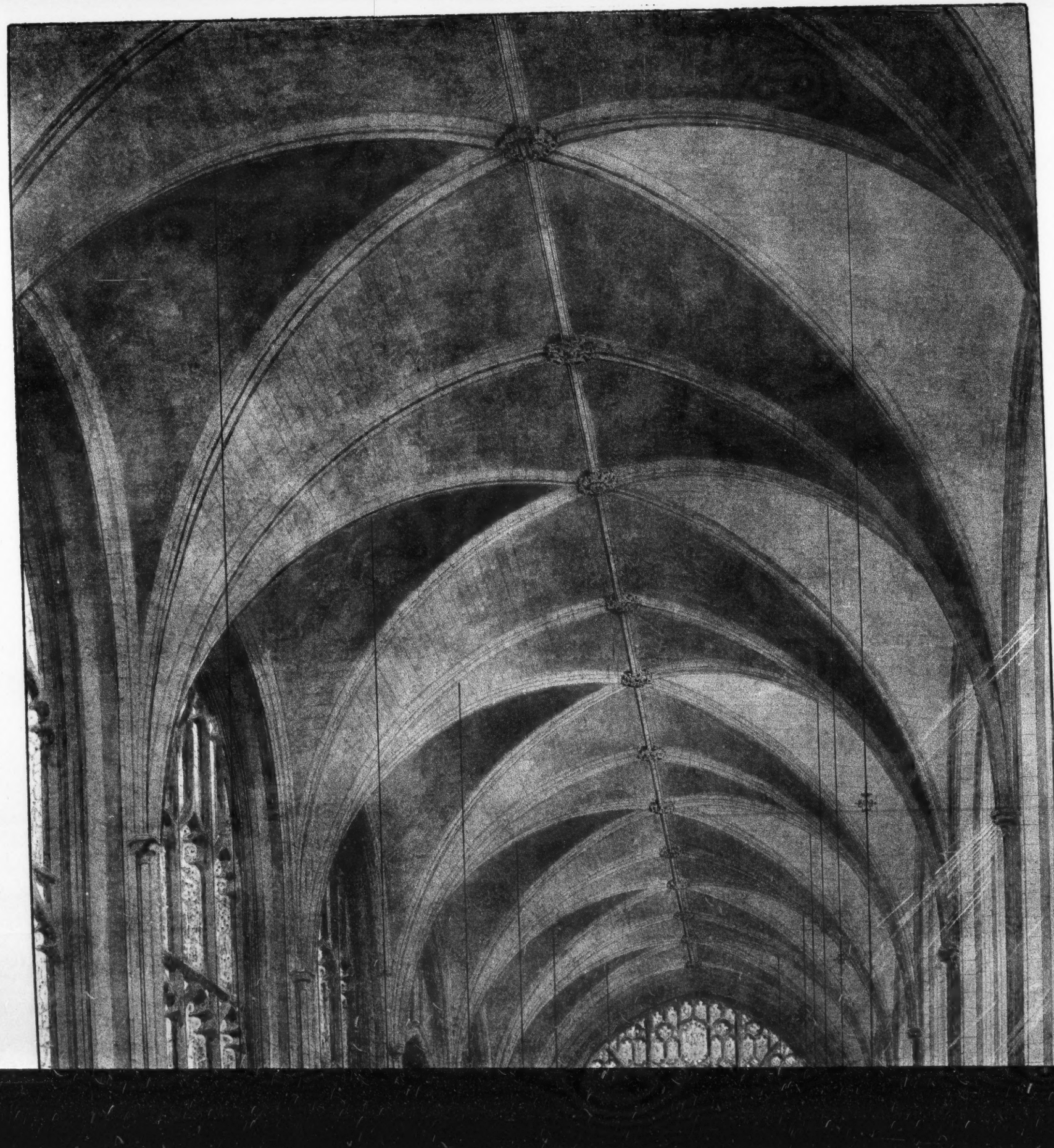
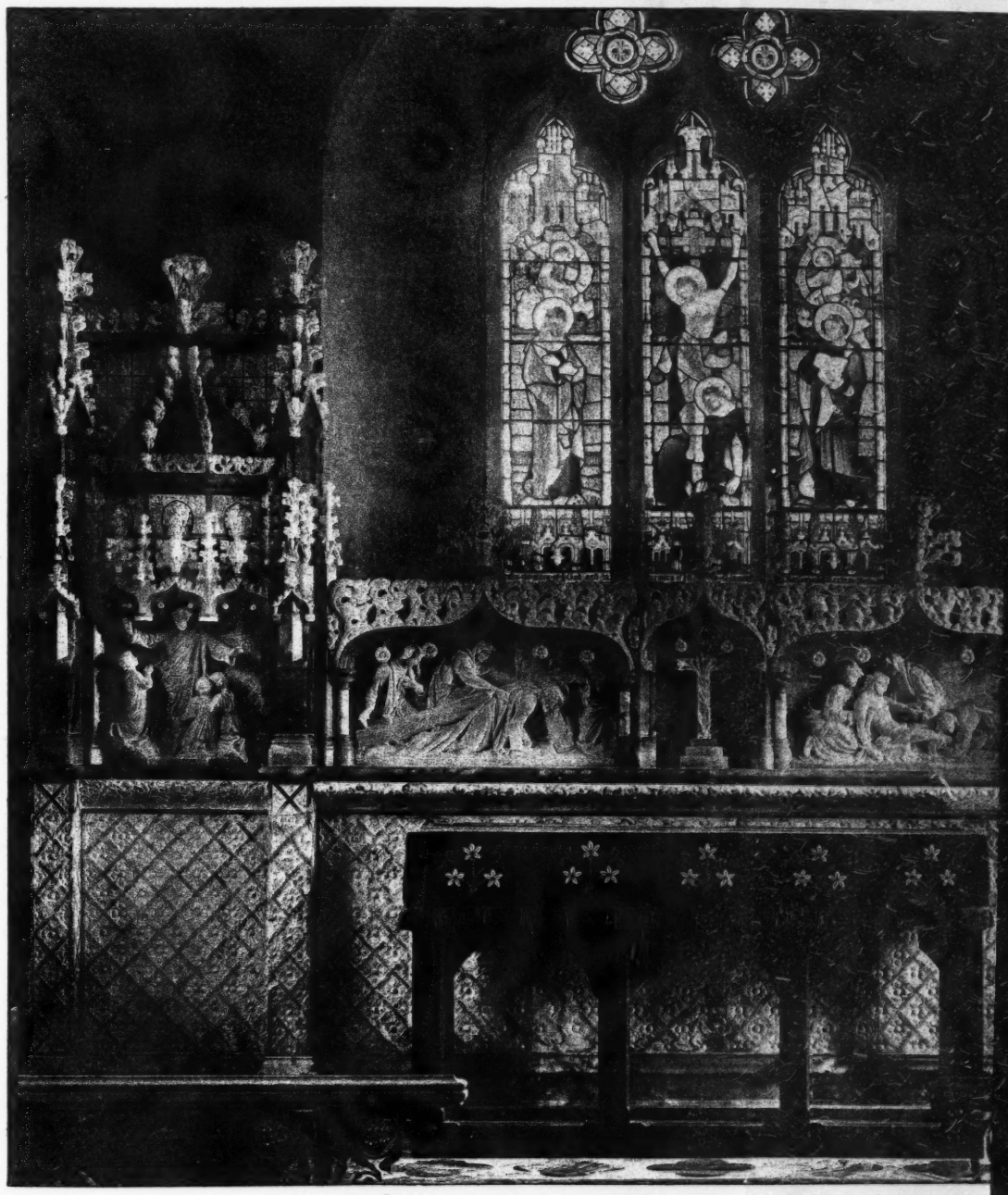
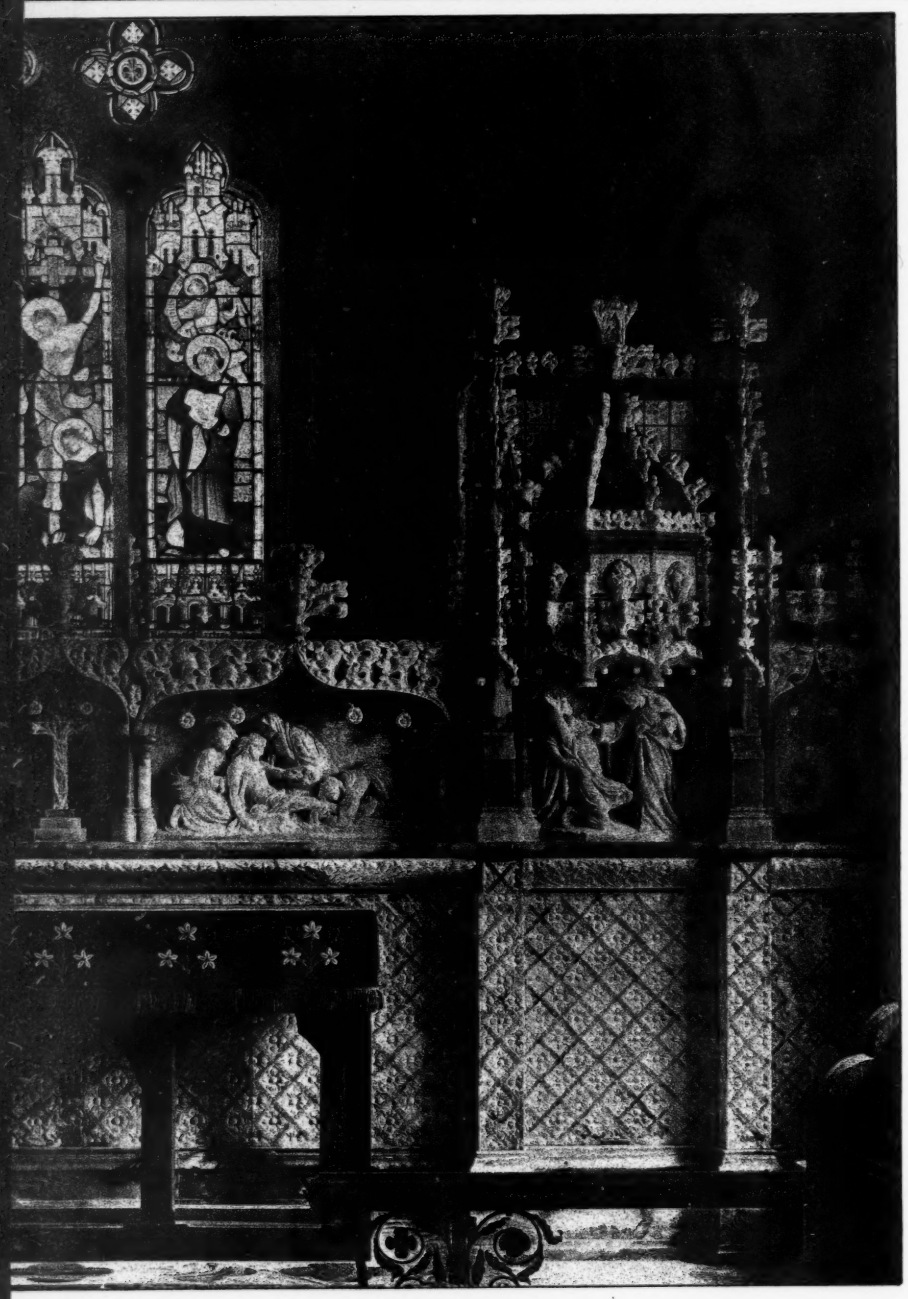


INK. PHOTO SPRAGUE & Co 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

INTERIOR OF NEW CHAPEL, CHELTENHAM COLLEGE.—Mr. Henry Prothero, Architect.



REREDOS, BRATTON CLOVELLY CHURCH.—Messrs. Tait &



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LY CHURCH.—Messrs. Tait & Harvey, Architects.